Holt California Mathematics

Course 1

Homework and Practice Workbook

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CONTENTS

Name _____ Date _____ Class _____

California Standards Preparation for AF2.0

LESSON 1-1

Practice

Numbers and Patterns

Identify a possible pattern. Use the pattern to write the next three numbers.

1. 41, 37, 33, 29, ____, ____, ____, ...

_____

_____

2. 50, 52, 56, 62, ____, ____, ____, ...

_____

_____

3. 320, 160, 80, 40, ____, ____, ____, ...

_____

_____

4. 24, 40, 56, 72, ____, ____, ____, ...

_____

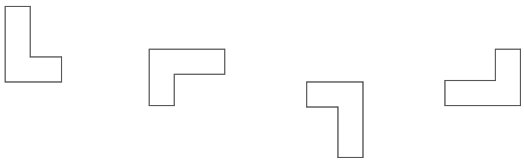
_____

Identify a possible pattern. Use the pattern to draw the next three figures.

5.

_____

6.



_____

7. Complete the table so that it shows the number of dots in each figure.

Figure 1 **Figure 2** **Figure 3** **Figure 4** **Figure 5**

Figure	1	2	3
Number of Dots			

How many dots are in the fifth figure of the pattern? _____

Use drawings to justify your answer.

Name _____ Date _____ Class _____

California Standards Preparation for AF1.3 and AF1.4

LESSON 1-2

Practice

Exponents

Find each value.

1. 5^2 _____

2. 2^4 _____

3. 3^3 _____

4. 7^2 _____

5. 4^4 _____

6. 12^2 _____

7. 10^3 _____

8. 11^1 _____

9. 1^6 _____

10. 20^2 _____

11. 6^3 _____

12. 7^3 _____

Write each number using an exponent and the given base.

13. 16, base 4 _____

14. 25, base 25 _____

15. 100, base 10 _____

16. 125, base 5 _____

17. 32, base 2 _____

18. 243, base 3 _____

19. 900, base 30 _____

20. 121, base 11 _____

21. 3,600, base 60 _____

22. 256, base 4 _____

23. 512, base 8 _____

24. 196, base 14 _____

25. Damon has 4 times as many stamps as Julia. Julia has 4 times as many stamps as Claire. Claire has 4 stamps. Write the number of stamps Damon has in both exponential form and standard form.

_____

26. Holly starts a jump rope exercise program. She jumps rope for 3 minutes the first week. In the second week, she triples the time she jumps. In the third week, she triples the time of the second week, and in the fourth week, she triples the time of the third week. How many minutes does she jump rope during the fourth week?

_____

Name _____ Date _____ Class _____

California Standards AF1.3, AF1.4

LESSON 1-3

Practice

Order of Operations

Simplify each expression.

1. $15 \cdot 3 + 12 \cdot 2$ _____

2. $212 + 21 \div 3$ _____

3. $9 \cdot 3 - 18 \div 3$ _____

4. $65 - 36 \div 3$ _____

5. $100 - 9^2 + 2$ _____

6. $3 \cdot 5 - 45 \div 3^2$ _____

7. $54 \div 6 + 4 \cdot 6$ _____

8. $(6 + 5) \cdot 16 \div 2$ _____

9. $60 - 8 \cdot 12 \div 3$ _____

10. $45 - 3^2 \cdot 5$ _____

11. $52 - (8 \cdot 2 \div 4) + 3^2$ _____

12. $(2^3 + 10 \div 2) \cdot 3$ _____

13. $25 + 7(18 - 4^2)$ _____

14. $(6 \cdot 3 - 12)^2 \div 9 + 7$ _____

15. $4^3 - (3 + 12 \cdot 2 - 9)$ _____

16. $2^4 \div 8 + 5$ _____

17. $(1 + 2)^2 \cdot (3 - 1)^2 \div 2$ _____

18. $(16 \div 4) + 4 \cdot (2^2 - 2)$ _____

19. $2^5 - (3 \cdot 7 - 7)$ _____

20. $75 + 5^2 - (8 - 3)$ _____

21. $9 \cdot 6 - 5(10 - 3)$ _____

22. $96 \div 4 + 5 \cdot 2^2$ _____

23. $(15 - 6)^2 \div 3 - 3^3$ _____

24. $19 - 8 \cdot 5 \div 10 + 6 \div 3$ _____

25. Jared has $32. He buys 5 packs of trading cards that cost $3 each and a display book that costs $7. Simplify the expression $32 - (5 \cdot 3 + 7)$ to find out how much money Jared has left.

_____

26. David buys 3 movie tickets for $6 each and 2 bags of popcorn for $2 each. Simplify the expression $3 \cdot 6 + 2 \cdot 2$ to find out how much money David spent in all.

_____

Name _____ Date _____ Class _____

California Standards AF1.3

LESSON 1-4

Practice

Properties of Numbers

Tell which property is represented.

1. 12 • 14 = 14 • 12

_____

2. 1 • 36 = 36

_____

3. (17 + 36) + 4 = 17 + (36 + 4)

_____

4. 8 • 12 • 5 = 8 • (12 • 5)

_____

Simplify each expression. Justify each step.

5. 4 • 9 • 50

4 • 9 • 50 = _____

= _____

= _____

= _____

6. (33 + 45) + 7

(33 + 45) + 7 =

= _____

=

= _____

Use the Distributive Property to find each product.

7. 3(26) =

=

=

= _____

8. (18)9 = _____

=

=

= _____

Name _____ Date _____ Class _____

California Standards AF1.2, AF1.3

LESSON 1-5

Practice

Evaluating Algebraic Expressions

Evaluate $n - 5$ for each value of n.

1. $n = 8$ _____

2. $n = 121$ _____

3. $n = 32$ _____

4. $n = 59$ _____

Evaluate each expression for the given values of the variable.

5. $3n + 15$ for $n = 4$ _____

6. $h \div 12$ for $h = 60$ _____

7. $32x - 32$ for $x = 2$ _____

8. $\frac{c}{2}$ for $c = 24$ _____

9. $(n \div 2)5$ for $n = 14$ _____

10. $8p + 148$ for $p = 15$ _____

11. $e^2 - 7$ for $e = 8$ _____

12. $3d^2 + d$ for $d = 5$ _____

13. $40 - 4k^3$ for $k = 2$ _____

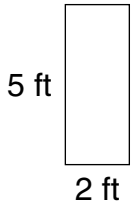
14. $2y - z$ for $y = 21$ and $z = 19$ _____

15. $3h^2 + 8m$ for $h = 3$ and $m = 2$ _____

16. $18 \div a + b \div c$ for $a = 6$, $b = 45$ and $c = 9$ _____

17. $10x \div 4y \times 8z$ for $x = 14$, $y = 5$ and $z = 2$ _____

18. You can find the area of a rectangle with the expression lw where l represents the length and w represents the width. What is the area of the rectangle at right in square feet?



_____

19. Rita drove an average of 55 mi/h on her trip to the mountains. You can use the expression $55h$ to find out how many miles she drove in h hours. If she drove for 5 hours, how many miles did she drive?

_____

Name _____ Date _____ Class _____

California Standards AF1.2

LESSON 1-6

Practice

Writing Algebraic Expressions

Write each phrase as an algebraic expression.

1. 125 decreased by a number

_____

2. 359 more than z

_____

3. the product of a number and 35

_____

4. the quotient of 100 and w

_____

5. twice a number, plus 27

_____

6. 12 less than 15 times x

_____

7. the product of e and 4, divided by 12

_____

8. y less than 18 times 6

_____

9. 48 more than the quotient of a number and 64 _____

10. 500 less than the product of 4 and a number _____

11. the quotient of p and 4, decreased by 320 _____

12. 13 multiplied by the amount 60 minus w _____

13. the quotient of 45 and the sum of c and 17 _____

14. twice the sum of a number and 600 _____

15. There are twice as many flute players as there are trumpet players in the band. If there are n flute players, write an algebraic expression to find out how many trumpet players there are. _____

16. The Nile River is the longest river in the world at 4,160 miles. A group of explorers traveled along the entire Nile in x days. They traveled the same distance each day. Write an algebraic expression to find each day's distance. _____

17. A slice of pizza has 290 calories, and a stalk of celery has 5 calories. Write an algebraic expression to find out how many calories there are in a slices of pizza and b stalks of celery. _____

18. At Grant Cinemas, adult tickets cost $8.50 and children's tickets cost $5.50. Write an algebraic expression for the cost of a adult tickets and c children's tickets. _____

Name _____ Date _____ Class _____

California Standards Preparation for AF1.1

LESSON 1-7

Practice

Equations and Their Solutions

Determine whether the given value of the variable is a solution.

1. $9 + x = 21$ for $x = 11$ _____

2. $n - 12 = 5$ for $n = 17$ _____

3. $25 \cdot r = 75$ for $r = 3$ _____

4. $72 \div q = 8$ for $q = 9$ _____

5. $28 + c = 43$ for $c = 15$ _____

6. $u \div 11 = 10$ for $u = 111$ _____

7. $\frac{k}{8} = 4$ for $k = 24$ _____

8. $16x = 48$ for $x = 3$ _____

9. $73 - f = 29$ for $f = 54$ _____

10. $67 - j = 25$ for $j = 42$ _____

11. $39 \div v = 13$ for $v = 3$ _____

12. $88 + d = 100$ for $d = 2$ _____

13. $14p = 20$ for $p = 5$ _____

14. $6w = 30$ for $w = 5$ _____

15. $7 + x = 70$ for $x = 10$ _____

16. $6 \cdot n = 174$ for $n = 29$ _____

Replace each ? with a number that makes the equation correct.

17. $5 + 1 = 2 +$? ____

18. $10 -$? $= 12 - 7$ ____

19. ? $\cdot 3 = 2 \cdot 9$ ____

20. $28 \div 4 = 14 \div$? ____

21. ? $+ 8 = 6 + 3$ ____

22. $12 \cdot 0 =$? $\cdot 15$ ____

23. Carla had $15. After she bought lunch, she had $8 left. Write an equation using the variable x to model this situation. What does your variable represent?

_____

_____

24. Seventy-two people signed up for the soccer league. After the players were evenly divided into teams, there were 6 teams in the league. Write an equation to model this situation using the variable x.

_____

_____

Name _____ Date _____ Class _____

California Standards AF1.1

LESSON 1-8

Practice

Solving Equations by Subtracting

Solve each equation. Check your answers.

1. $s + 3 = 23$

2. $v + 10 = 49$

3. $q + 9 = 16$

4. $81 + m = 90$

5. $38 + x = 44$

6. $28 + n = 65$

7. $t + 31 = 50$

8. $25 + p = 39$

9. $19 + v = 24$

Solve each equation.

10. $m + 8 = 17$

11. $r + 14 = 20$

12. $25 + x = 32$

13. $47 + p = 55$

14. $19 + d = 27$

15. $13 + n = 26$

16. $q + 12 = 19$

17. $34 + f = 43$

18. $52 + w = 68$

19. Kenya bought 28 beads, and Nancy bought 25 beads. It takes 35 beads to make a necklace. Write and solve two addition equations to find how many more beads they each need to make a necklace.

20. During a sales trip, Mr. Jones drove 15 miles east from Brownsville to Carlton. Then he drove several more miles east from Carlton to Sun City. The distance from Brownsville to Sun City is 35 miles. Write and solve an addition equation to find how many miles it is from Carlton to Sun City.

Name _____ Date _____ Class _____

California Standards AF1.1

LESSON 1-9

Practice

Solving Equations by Adding

Solve each equation. Check your answers.

1. $s - 8 = 12$

_____

2. $v - 11 = 7$

_____

3. $9 = q - 5$

_____

4. $m - 21 = 5$

_____

5. $34 = x - 12$

_____

6. $n - 45 = 45$

_____

7. $t - 19 = 9$

_____

8. $p - 6 = 27$

_____

9. $15 = v - 68$

_____

Solve each equation.

10. $7 = m - 5$

_____

11. $r - 10 = 22$

_____

12. $16 = x - 4$

_____

13. $40 = p - 11$

_____

14. $28 = d - 6$

_____

15. $n - 9 = 42$

_____

16. $q - 85 = 8$

_____

17. $f - 13 = 18$

_____

18. $47 = w - 38$

_____

19. Ted took 17 pictures at the aquarium. He now has 7 pictures left on the roll. Write and solve a subtraction equation to find out how many photos Ted had when he went to the aquarium.

_____

20. Ted bought a dolphin poster for $12. He now has $5. Write and solve a subtraction equation to find out how much money Ted took to the aquarium.

_____

Name _____ Date _____ Class _____

California Standards AF1.1

LESSON 1-10

Practice

Solving Equations by Dividing

Solve each equation. Check your answers.

1. $8s = 72$

_____

2. $4v = 28$

_____

3. $27 = 9q$

_____

4. $12m = 60$

_____

5. $48 = 6x$

_____

6. $7n = 63$

_____

7. $10t = 130$

_____

8. $15p = 450$

_____

9. $84 = 6v$

_____

Solve each equation.

10. $49 = 7m$

_____

11. $20r = 80$

_____

12. $64 = 8x$

_____

13. $36 = 4p$

_____

14. $147 = 7d$

_____

15. $11n = 110$

_____

16. $12q = 144$

_____

17. $25f = 125$

_____

18. $128 = 16w$

_____

19. A hot-air balloon flew at 10 miles per hour. Using the variable *h,* write and solve a multiplication equation to find how many hours the balloon traveled if it covered a distance of 70 miles.

_____

_____

20. A passenger helicopter can travel 300 miles in the same time it takes a hot-air balloon to travel 20 miles. Using the variable *s,* write and solve a multiplication equation to find how many times faster the helicopter can travel than the hot air balloon.

_____

_____

Name _____ Date _____ Class _____

California Standards AF1.1

LESSON 1-11

Practice

Solving Equations by Multiplying

Solve each equation. Check your answers.

1. $\frac{s}{6} = 7$

2. $\frac{v}{5} = 9$

3. $12 = \frac{q}{7}$

4. $\frac{m}{2} = 16$

5. $26 = \frac{x}{3}$

6. $\frac{n}{8} = 4$

7. $\frac{t}{11} = 11$

8. $\frac{p}{7} = 10$

9. $7 = \frac{v}{8}$

Solve each equation.

10. $10 = \frac{m}{9}$

11. $\frac{r}{5} = 8$

12. $11 = \frac{x}{7}$

13. $9 = \frac{p}{12}$

14. $15 = \frac{d}{5}$

15. $\frac{n}{4} = 28$

16. $\frac{q}{2} = 134$

17. $\frac{u}{16} = 1$

18. $2 = \frac{w}{25}$

19. All the seats in the theater are divided into 6 groups. There are 35 seats in each group. Using the variable *s,* write and solve a division equation to find how many seats there are in the theater.

20. There are 16 ounces in one pound. A box of nails weighs 4 pounds. Using the variable *w,* write and solve a division equation to find how many ounces the box weighs.

Name _____ Date _____ Class _____

California Standards Preparation for NS1.1

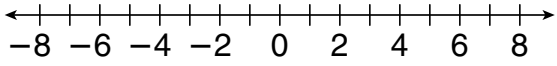
LESSON 2-1

Practice

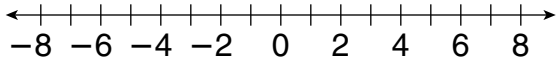
Introduction to Integers

Graph each integer and its opposite on a number line.

1. 8



2. −7

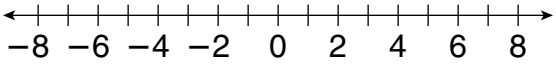


Compare the integers. Use < or >.

3. −15 ☐ −7 **4.** 8 ☐ −8 **5.** −14 ☐ 13 **6.** −18 ☐ −20

Use a number line to order the integers from least to greatest.

7. −1; 4; −5; 7; −3



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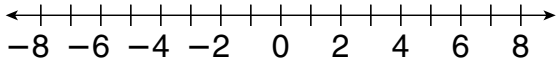
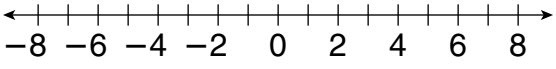
8. −6; 8; 0; 4; −2

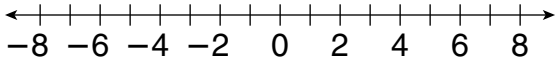


_____

9. 6; 5; −7; −8; −2



10. 1; 3; −4; −5; 7



Use a number line to find each absolute value.

11. |−18| _____ **12.** |11| _____ **13.** |−25| _____ **14.** |19| _____

15. |−10| _____ **16.** |16| _____ **17.** |22| _____ **18.** |−14| _____

19. |9| _____ **20.** |−24| _____ **21.** |−7| _____ **22.** |17| _____

23. Christy dove to a depth of 12 feet below the surface of the water. Write the depth as an integer.

_____

24. The highest point in North Carolina is Mt. Mitchell, with a height of 6,684 feet. Write the height of Mt. Mitchell as an integer.

_____

Name _____ Date _____ Class _____

California Standards NS2.3, AF1.2

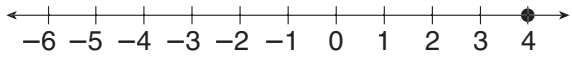
LESSON 2-2

Practice

Adding Integers

Use a number line to find each sum.

1. −1 + 5



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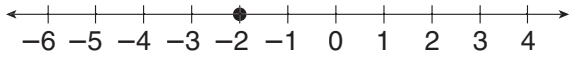
2. 4 + (−6)



_____

Find each sum.

3. −51 + (−9) _____

4. 27 + (−6) _____

5. 1 + (−30) _____

6. 15 + (−25) _____

7. 50 + (−7) _____

8. −19 + (−15) _____

9. (−23) + 9 _____

10. −19 + (−21) _____

11. −17 + 11 _____

12. 20 + (−8) _____

13. (−15) + (−7) _____

14. 12 + (−14) _____

Evaluate *e* + *f* for the given values.

15. $e = 9$, $f = -24$ _____

16. $e = -17$, $f = -7$ _____

17. $e = 32$, $f = -19$ _____

18. $e = -15$, $f = -15$ _____

19. $e = -20$, $f = 20$ _____

20. $e = -30$, $f = 12$ _____

21. The temperature rose 9°F in 3 hours. If the starting temperature was −5°F, what was the final temperature?

_____

22. Matt is playing a game. He gains 7 points, loses 10 points, gains 2 points, and then loses 8 points. What is his final score?

_____

Name _____ Date _____ Class _____

California Standards NS2.3, AF1.2

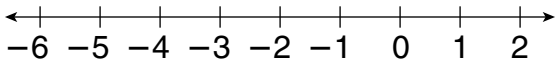
LESSON 2-3

Practice

Subtracting Integers

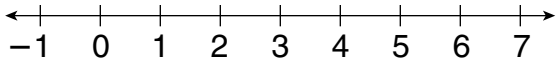
Use a number line to find each difference.

1. $-2 - 3$



_____

2. $5 - (-1)$



_____

Find each difference.

3. $-6 - 4$ _____

4. $-7 - (-12)$ _____

5. $12 - 16$ _____

6. $5 - (-19)$ _____

7. $-18 - (-18)$ _____

8. $23 - (-23)$ _____

9. $-10 - (-9)$ _____

10. $29 - (-13)$ _____

11. $9 - 15$ _____

12. $-12 - 14$ _____

13. $22 - (-8)$ _____

14. $-16 - (-11)$ _____

Evaluate $x - y$ for each set of values.

15. $x = 14$, $y = -2$ _____

16. $x = -11$, $y = 11$ _____

17. $x = -8$, $y = -15$ _____

18. $x = -9$, $y = -9$ _____

19. $x = 19$, $y = -20$ _____

20. $x = 20$, $y = 25$ _____

21. The high temperature one day was −1°F. The low temperature was −5°F.What was the difference between the high and low temperatures for the day?

_____

22. The temperature changed from 5°F at 6 P.M. to −2°F at midnight. How much did the temperature decrease?

_____

Name _____ Date _____ Class _____

California Standards NS2.3, AF1.4

LESSON 2-4

Practice

Multiplying and Dividing Integers

Find each product.

1. $8 \cdot (-5)$ _____

2. $-4 \cdot 7$ _____

3. $-6 \cdot (-3)$ _____

4. $-2 \cdot 4$ _____

5. $4 \cdot (-9)$ _____

6. $-9 \cdot 5$ _____

7. $6 \cdot 8$ _____

8. $-7 \cdot (-3)$ _____

Multiply.

9. $-6 \cdot (-6)$ _____

10. $9 \cdot (-3)$ _____

11. $-2 \cdot (-8)$ _____

12. $5 \cdot (-7)$ _____

13. $10 \cdot 8$ _____

14. $-5 \cdot 9$ _____

15. $9 \cdot (-6)$ _____

16. $(-4) \cdot (-11)$ _____

Find each quotient.

17. $25 \div (-5)$ _____

18. $-54 \div (-6)$ _____

19. $-10 \div 5$ _____

20. $-28 \div (-4)$ _____

21. $-42 \div (-7)$ _____

22. $-21 \div 3$ _____

23. $36 \div (-6)$ _____

24. $-81 \div (-9)$ _____

25. $-32 \div 8$ _____

26. $45 \div (-9)$ _____

27. $-72 \div (-8)$ _____

28. $50 \div 10$ _____

29. $-42 \div 6$ _____

30. $-72 \div (-9)$ _____

31. $40 \div 8$ _____

32. $56 \div (-7)$ _____

33. Kim was walking down a rocky path. For 4 minutes, the elevation dropped steadily. Altogether it dropped 8 feet. What was the change in elevation per minute for the 4 minutes?

_____

34. As a front passed, the temperature changed steadily over 6 hours. Altogether it changed -18 degrees. What was the change in temperature per hour for the 6 hours?

_____

Name _____ Date _____ Class _____

California Standards NS2.3, AF1.1

LESSON 2-5

Practice

Solving Equations Containing Integers

Solve. Check each answer.

1. $y - 5 = -4$

2. $n - 9 = -14$

3. $13 = x - 15$

4. $p + 18 = 14$

5. $q + 6 = -2$

6. $0 = w + 4$

7. $9h = -36$

8. $-3b = 36$

9. $-100 = -4u$

10. $\frac{d}{5} = -7$

11. $\frac{c}{4} = -20$

12. $\frac{s}{-9} = 9$

13. $f + 15 = -16$

14. $-75 = 3v$

15. $g - 19 = -21$

16. $-63 = -9s$

17. $14 + m = -10$

18. $12 = \frac{w}{4}$

19. $x = 15 - 31$

20. $\frac{e}{-7} = 8$

21. $-6 = 21 - n$

22. The temperature in Buffalo, New York, was $-2°$F one day. This was 42 degrees warmer than the temperature in Nome, Alaska, on the same day. What was the temperature in Nome?

23. LaSanda bought 20 shares of stock for $175. She sold the stock for a total profit of $25. What was the selling price of each share of stock?

Name _____ Date _____ Class _____

California Standards Preparation for AF1.0

LESSON 2-6

Practice

The Coordinate Plane

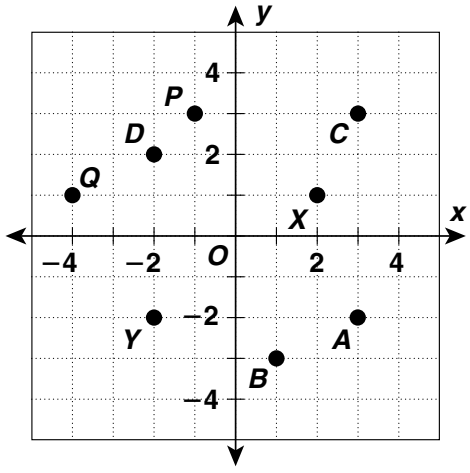
Use the coordinate plane for Exercises 1–12.

Name the quadrant where each point is located.

1. *D* _____ **2.** *P* _____

3. *Y* _____ **4.** *B* _____

5. *C* _____ **6.** *X* _____



Give the coordinates of each point.

7. *X* _____ **8.** *A* _____

9. *P* _____ **10.** *Q* _____

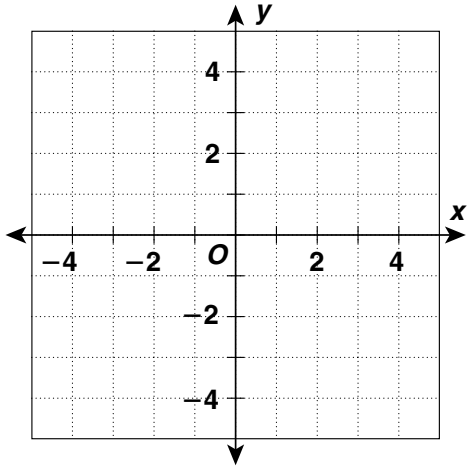
11. *Y* _____ **12.** *D* _____

Graph each point on the coordinate plane at right.

13. *X* (3, 1) **14.** *T* (−2, −2)

15. *C* (1, −2) **16.** *U* (0, −3)

17. *P* (2, 0) **18.** *A* (−4, −1)



19. Does every point lie in a quadrant? Explain.

_____

_____

20. When a point lies on the *x*-axis, what do you know about its *y*-coordinate? When a point lies on the *y*-axis, what do you know about its *x*-coordinate?

_____

_____

Name _____ Date _____ Class _____

California Standards Preparation for AF1.0

LESSON 2-7

Practice

Equations in Two Variables

Write an equation in two variables that gives the values in each table. Use the equation to find the value of *y* for the indicated value of *x*.

1.

x	1	2	3	4	5
y	7	14	21	28	♦

_____

_____

2.

x	2	3	4	5	6
y	−3	−2	−1	0	♦

_____

_____

3.

x	20	16	12	8	4
y	10	8	6	4	♦

_____

_____

4.

x	7	8	9	10	11
y	11	12	13	14	♦

_____

_____

Write an equation for the relationship. Tell what each variable you use represents.

5. Amanda is 7 years younger than her cousin.

_____

6. The population of North Carolina is twice as large as the population of South Carolina.

_____

_____

7. An Internet book company charges $7 for each paperback book, plus $2.75 for shipping and handling per order.

_____

_____

8. Henry records how many days he rides his bike and how far he rides each week. He rides the same distance each time. He rode 18 miles in 3 days, 24 miles in 4 days, and 42 miles in 7 days. Write an equation in two variables for the relationship.

_____

Name _____ Date _____ Class _____

California Standards NS2.3, AF1.0

LESSON 2-8

Practice

Graphing Equations

Use the given *x*-values to write solutions of each equation as ordered pairs.

1. $y = 5x + 3$ for $x = 1, 2, 3$

_____

2. $y = -4x$ for $x = 3, 5, 7$

_____

Determine whether each ordered pair is a solution of the given equation.

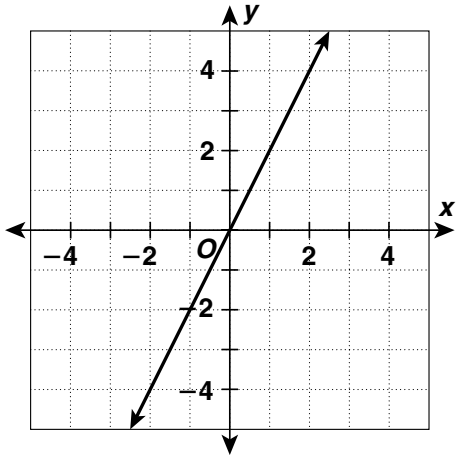
3. (6, 4); $y = 2x - 8$ _____

4. (8, 72); $y = x \div 9$ _____

5. (−3, −18); $y = -6x$ _____

6. (5, 64); $y = 12x + 4$ _____

Use the graph of the linear equation to find the value of *y* for each given value of *x*.



7. $x = 2$ _____

8. $x = 1$ _____

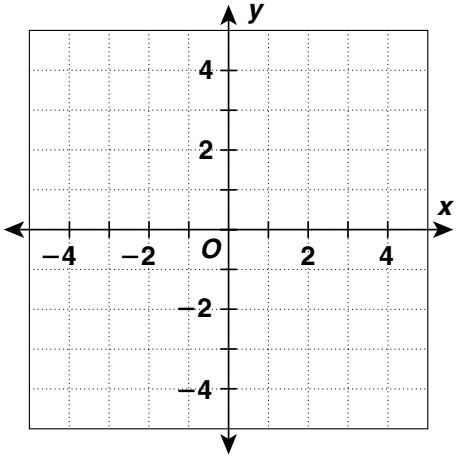
9. $x = 0$ _____

10. $x = -1$ _____

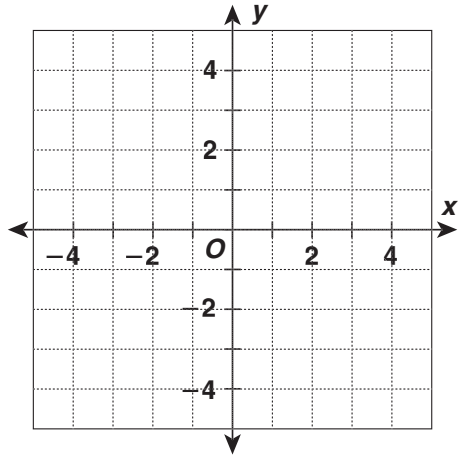
11. $x = -2$ _____

Graph each equation.

12. $y = x + 1$



13. $y = 3 - x$



Name _____ Date _____ Class _____

California Standards Preparation for NS2.4

LESSON 3-1

Practice

Prime Factorization

Tell whether each number is prime or composite.

1. 33 _____

2. 41 _____

3. 52 _____

4. 79 _____

5. 96 _____

6. 121 _____

7. 83 _____

8. 119 _____

Write the prime factorization of each number.

9. 57 _____

10. 49 _____

11. 88 _____

12. 95 _____

13. 105 _____

14. 98 _____

15. 52 _____

16. 42 _____

17. 68 _____

18. 91 _____

19. 60 _____

20. 72 _____

21. 56 _____

22. 144 _____

23. 370 _____

24. 168 _____

25. 124 _____

26. 515 _____

27. 725 _____

28. 220 _____

29. 450 _____

30. 1,000 _____

31. 1,040 _____

32. 2,500 _____

33. The prime factorization of a number is $3^2 \cdot 5 \cdot 11$. What is the number?

_____

Name _____ Date _____ Class _____

California Standards NS2.4

LESSON 3-2

Practice

Greatest Common Divisor

Find the greatest common divisor (GCD).

1. 12, 15 _____

2. 22, 33 _____

3. 63, 45 _____

4. 15, 50 _____

5. 18, 81 _____

6. 18, 48 _____

7. 20, 24 _____

8. 14, 42, 49 _____

9. 3, 6, 9 _____

10. 16, 24, 30 _____

11. 16, 40, 88 _____

12. 42, 70 _____

13. 25, 125, 200 _____

14. 26, 39, 52 _____

15. 36, 100 _____

16. 35, 77 _____

17. 56, 84 _____

18. 14, 49, 56, 84 _____

19. 30, 75, 60, 90 _____

20. 12, 38, 40, 94 _____

21. 48, 66, 96, 102 _____

22. Volunteers are preparing identical backpacks for refugees. There are 32 maps and 24 dictionaries to use for the backpacks. What is the greatest number of backpacks they can prepare using all of the maps and dictionaries?

_____

23. Alyssa is preparing identical fruit baskets. There are 36 oranges and 60 apples to use for the baskets. What is the greatest number of fruit baskets she can prepare using all of the oranges and apples?

_____

Name _____ Date _____ Class _____

California Standards NS2.4

LESSON 3-3

Practice

Least Common Multiple

Find the least common multiple (LCM).

1. 8, 10 _____

2. 10, 15 _____

3. 6, 9 _____

4. 12, 16 _____

5. 18, 30 _____

6. 5, 11 _____

7. 15, 45 _____

8. 7, 28 _____

9. 4, 14 _____

10. 3, 10, 12 _____

11. 9, 36, 60 _____

12. 5, 15 _____

13. 7, 14, 49 _____

14. 8, 12, 24, 96 _____

15. 5, 25, 30 _____

16. 5, 9, 18 _____

17. 4, 10, 12, 15 _____

18. 4, 9, 12, 18 _____

19. 4, 12, 24, 36 _____

20. 24, 30, 48, 60 _____

21. 5, 9, 15, 18 _____

22. Jasmine is helping her father plant trees to create a border around the back yard. Jasmine plants a tree every 25 minutes, and her father plants a tree every 15 minutes. If they started together, how long before they would finish planting a tree at the same time?

_____

23. Two dancers are rehearsing in a studio. One dancer's routine lasts 12 minutes. The other dancer's routine lasts 15 minutes. If they start together and take no breaks between their routines, how long before they start together again?

_____

24. Evan and Renzo are swimming laps in the pool. It takes Evan 8 minutes to complete 1 lap and Renzo 6 minutes to complete 1 lap. They start together at the tops of their lanes. In how many minutes will they be together again at the tops of their lanes?

_____

Name _____ Date _____ Class _____

California Standards NS1.1, NS2.4

LESSON 3-4

Practice

Equivalent Fractions and Mixed Numbers

Find a fraction equivalent to the given fraction.

1. $\frac{2}{9}$ _____ **2.** $\frac{8}{15}$ _____ **3.** $\frac{7}{8}$ _____

4. $\frac{16}{24}$ _____ **5.** $\frac{12}{20}$ _____ **6.** $\frac{9}{12}$ _____

Write the fractions with a common denominator. Then determine if they are equivalent.

7. $\frac{8}{10}$ and $\frac{12}{15}$ _____

8. $\frac{6}{8}$ and $\frac{8}{12}$ _____

9. $\frac{3}{9}$ and $\frac{4}{8}$ _____

10. $\frac{7}{4}$ and $\frac{9}{5}$ _____

11. $\frac{15}{12}$ and $\frac{20}{16}$ _____

12. $\frac{15}{9}$ and $\frac{30}{18}$ _____

Write each as a mixed number.

13. $\frac{21}{8}$ _____ **14.** $\frac{37}{4}$ _____ **15.** $\frac{16}{5}$ _____ **16.** $\frac{49}{9}$ _____

Write each as an improper fraction.

17. $8\frac{2}{3}$ _____ **18.** $1\frac{7}{12}$ _____ **19.** $25\frac{3}{4}$ _____ **20.** $7\frac{5}{6}$ _____

21. Maria's desk is $33\frac{3}{4}$ inches long. Write this number as an improper fraction.

_____

22. Leon walked $\frac{5}{8}$ mile. Liz walked $\frac{10}{16}$ mile. Did they walk the same distance?

_____

Name _____ Date _____ Class _____

California Standards Preparation for NS1.1, NS2.4

LESSON 3-5

Practice

Equivalent Fractions and Decimals

Write each fraction as a decimal. Round to the nearest hundredth, if necessary.

1. $\frac{2}{10}$ _____ **2.** $\frac{19}{20}$ _____ **3.** $\frac{5}{8}$ _____ **4.** $\frac{11}{5}$ _____

5. $\frac{19}{6}$ _____ **6.** $\frac{17}{4}$ _____ **7.** $\frac{13}{12}$ _____ **8.** $\frac{30}{7}$ _____

9. $\frac{7}{4}$ _____ **10.** $\frac{9}{20}$ _____ **11.** $\frac{11}{10}$ _____ **12.** $\frac{2}{25}$ _____

Write each decimal as a fraction in simplest form.

13. 0.85 _____

14. 0.11 _____

15. −0.25 _____

16. 4.3 _____

17. 7.75 _____

18. 5.03 _____

19. −1.06 _____

20. 0.375 _____

21. −2.65 _____

22. −5.6 _____

23. 1.12 _____

24. 0.005 _____

Write each answer as a decimal rounded to the nearest thousandth.

25. In the 1998 Winter Olympics, a total of 205 medals were awarded. The United States won 13 medals. What portion of the medals did the United States win?

_____

26. On a test, Hailey answered 64 out of 75 questions correctly. What portion of her answers was correct?

_____

Name _____ Date _____ Class _____

California Standards NS2.1, NS2.4

LESSON 3-6

Practice

Comparing and Ordering Rational Numbers

Compare the fractions. Write < or >. Justify your answer.

1. $-\frac{7}{8} \square -\frac{5}{8}$

2. $\frac{3}{10} \square \frac{3}{8}$

3. $5\frac{7}{12} \square 5\frac{5}{12}$

Compare the decimals. Write < or >. Justify your answer.

4. $-0.531 \square -0.513$

5. $0.73 \square 0.073$

6. $3.\overline{59} \square 3.599$

Order the numbers from least to greatest.

7. $\frac{4}{9}$, 0.4, 0.45

8. 1.7, 1.65, $1\frac{2}{3}$

9. 3.18, $3\frac{1}{8}$, 3.80

10. -5, -5.25, $-5\frac{2}{5}$

11. $-6\frac{3}{4}$, 6.34, -6.4

12. $\frac{11}{12}$, $\frac{8}{9}$, 0.91

13. $-\frac{3}{5}$, $-\frac{5}{7}$, -0.65

14. 0.3, 0.345, $\frac{1}{3}$

15. -0.75, $\frac{7}{8}$, $-\frac{5}{8}$

16. A ream of paper contains 500 sheets of paper. Norm has 373 sheets of paper left from a ream. Express the portion of a ream Norm has as a fraction and as a decimal.

17. The density of Venus, compared to Earth having a density of 1, is 0.943. The density of Mercury is 0.983, compared to the density of Earth. Which planet has a greater density, Venus or Mercury?

Name _____ Date _____ Class _____

California Standards Preparation for NS2.1

LESSON 4-1

Practice

Estimating with Fractions

Estimate each sum or difference.

1. $\frac{5}{11} + \frac{4}{9}$

2. $\frac{6}{13} + \frac{8}{9}$

3. $\frac{9}{10} - \frac{4}{9}$

4. $1\frac{5}{8} - \frac{4}{7}$

5. $3\frac{7}{8} - \frac{2}{5}$

6. $\frac{8}{9} - \frac{1}{12}$

7. $4\frac{5}{16} + 2\frac{9}{10}$

8. $11\frac{3}{7} - 5\frac{5}{6}$

9. $7\frac{1}{16} - \frac{11}{12}$

Estimate each product or quotient.

10. $12\frac{2}{5} \div 5\frac{3}{4}$

11. $7\frac{7}{8} \cdot 4\frac{3}{5}$

12. $5\frac{1}{6} \cdot 3\frac{2}{9}$

13. $23\frac{7}{10} \div 4\frac{2}{5}$

14. $17\frac{11}{12} \div 8\frac{5}{9}$

15. $8\frac{7}{12} \cdot 6\frac{9}{10}$

16. $12\frac{3}{8} \cdot 6\frac{1}{6}$

17. $35\frac{2}{3} \div 3\frac{5}{7}$

18. $16\frac{5}{8} \cdot 2\frac{1}{5}$

19. A hallway has a length of $15\frac{3}{4}$ feet and a length of $4\frac{1}{12}$ feet. Estimate the area of the hallway in square feet.

20. A 6-week old puppy weighed $8\frac{7}{16}$ pounds. At 12 weeks of age, the same puppy weighed about $17\frac{3}{8}$ pounds. Estimate how much weight the puppy gained between the ages of 6 weeks and 12 weeks.

Name _____ Date _____ Class _____

California Standards NS2.1, NS2.4

LESSON 4-2

Practice

Adding and Subtracting Fractions

Add or subtract. Write each answer in simplest form.

1. $\frac{1}{5} + \frac{2}{5}$ _____

2. $\frac{4}{15} + \frac{8}{15}$ _____

3. $\frac{7}{12} - \frac{5}{12}$ _____

4. $\frac{9}{10} - \frac{7}{10}$ _____

5. $\frac{11}{12} - \frac{7}{12}$ _____

6. $\frac{2}{7} + \frac{6}{7}$ _____

7. $\frac{11}{15} + \frac{7}{15}$ _____

8. $\frac{3}{16} - \frac{1}{16}$ _____

9. $\frac{8}{21} + \frac{5}{21}$ _____

10. $\frac{4}{5} - \frac{3}{4}$ _____

11. $\frac{3}{8} + \frac{1}{2}$ _____

12. $\frac{21}{25} - \frac{2}{5}$ _____

13. $\frac{11}{12} + \frac{5}{6}$ _____

14. $\frac{7}{8} - \frac{5}{12}$ _____

15. $\frac{9}{10} + \frac{5}{6}$ _____

16. $\frac{7}{8} - \frac{2}{5}$ _____

17. $\frac{5}{6} + \frac{11}{15}$ _____

18. $\frac{3}{4} - \frac{8}{15}$ _____

19. The school track is $\frac{7}{8}$ mile in length. Sherri ran $\frac{2}{3}$ mile. How much farther does she have to go to get all the way around the track?

_____

20. The Millers budget $\frac{1}{2}$ of their income for fixed expenses and $\frac{1}{8}$ of their income for savings. What fraction of their income is left?

_____

Name _____ Date _____ Class _____

California Standards NS2.1, NS2.4

LESSON 4-3

Practice

Adding and Subtracting Mixed Numbers

Add. Write each answer in simplest form.

1. $7\frac{2}{7} + 6\frac{5}{7}$

2. $5\frac{4}{9} + 3\frac{7}{9}$

3. $4\frac{1}{3} + 8\frac{1}{4}$

4. $2\frac{7}{15} + 3\frac{11}{15}$

5. $6\frac{9}{10} + 1\frac{2}{5}$

6. $2\frac{3}{5} + 1\frac{11}{20}$

7. $5\frac{9}{10} + 2\frac{5}{8}$

8. $2\frac{11}{12} + 3\frac{7}{8}$

9. $1\frac{2}{3} + 5\frac{7}{9}$

Subtract. Write each answer in simplest form.

10. $7\frac{7}{9} - 3\frac{5}{9}$

11. $9\frac{7}{10} - 5\frac{3}{10}$

12. $4\frac{13}{15} - 1\frac{7}{15}$

13. $6\frac{2}{3} - 3\frac{3}{5}$

14. $10\frac{3}{4} - 6\frac{1}{3}$

15. $2\frac{3}{10} - 1\frac{7}{8}$

16. $8\frac{7}{12} - 6\frac{1}{3}$

17. $5\frac{7}{8} - 3\frac{9}{10}$

18. $7\frac{6}{7} - 6\frac{3}{4}$

19. Tucker ran $5\frac{3}{8}$ miles on Monday and $3\frac{3}{4}$ miles on Tuesday. How far did he run on both days?

_____

Name _____ Date _____ Class _____

California Standards NS2.1, NS2.2, NS2.4

LESSON 4-4

Practice

Multiplying Fractions and Mixed Numbers

Multiply. Write each answer in simplest form.

1. $5 \cdot \frac{1}{2}$ _____

2. $9 \cdot \frac{3}{4}$ _____

3. $6 \cdot \frac{2}{5}$ _____

4. $\frac{9}{15} \cdot \frac{5}{7}$ _____

5. $\frac{9}{14} \cdot \frac{7}{9}$ _____

6. $\frac{7}{12} \cdot \frac{6}{14}$ _____

7. $12 \cdot \frac{3}{7}$ _____

8. $15 \cdot \frac{5}{6}$ _____

9. $21 \cdot \frac{3}{8}$ _____

10. $2\frac{1}{3} \cdot \frac{3}{5}$ _____

11. $3\frac{2}{5} \cdot \frac{1}{2}$ _____

12. $4\frac{5}{6} \cdot \frac{2}{5}$ _____

13. $2\frac{2}{5} \cdot \frac{2}{3}$ _____

14. $3\frac{3}{4} \cdot \frac{2}{5}$ _____

15. $8\frac{1}{6} \cdot \frac{3}{7}$ _____

16. $2\frac{1}{3} \cdot 3\frac{3}{8}$ _____

17. $1\frac{3}{5} \cdot 6\frac{2}{3}$ _____

18. $2\frac{2}{5} \cdot 4\frac{5}{6}$ _____

19. Rolf spent 15 hours last week practicing his saxophone. If $\frac{3}{10}$ of the time was spent practicing warm-up routines, how much time did he spend practicing warm-up routines?

_____

20. A muffin recipe calls for $\frac{2}{5}$ tablespoon of vanilla extract for 6 muffins. Arthur is making 18 muffins. How much vanilla extract does he need?

_____

Name _____ Date _____ Class _____

California Standards NS2.1, NS2.2, NS2.4

LESSON 4-5

Practice

Dividing Fractions and Mixed Numbers

Divide. Write each answer in simplest form.

1. $4 \div \frac{1}{2}$

2. $\frac{1}{5} \div \frac{1}{4}$

3. $\frac{1}{3} \div \frac{3}{5}$

4. $\frac{8}{9} \div \frac{2}{3}$

5. $\frac{3}{8} \div \frac{3}{4}$

6. $\frac{7}{10} \div \frac{3}{5}$

7. $\frac{5}{12} \div \frac{2}{5}$

8. $\frac{3}{4} \div \frac{4}{9}$

9. $\frac{7}{12} \div \frac{3}{4}$

10. $4\frac{1}{6} \div \frac{1}{3}$

11. $3\frac{1}{4} \div \frac{2}{5}$

12. $6\frac{1}{9} \div \frac{1}{6}$

13. $2\frac{1}{4} \div 1\frac{3}{4}$

14. $3\frac{3}{4} \div 2\frac{5}{6}$

15. $5\frac{1}{3} \div 1\frac{4}{5}$

16. $2\frac{1}{2} \div 2\frac{1}{3}$

17. $1\frac{3}{4} \div 1\frac{1}{4}$

18. $7\frac{2}{3} \div 1\frac{1}{5}$

19. Burger Barn has $46\frac{2}{3}$ pounds of ground beef. How many $\frac{1}{3}$-pound burgers can be made using all the ground beef?

20. Roberto needs some roofing tiles to be cut from a large tile. How many tiles that are each $14\frac{3}{8}$ inches in length can he cut from a larger piece of tile that is $100\frac{5}{8}$ inches long?

Name _____ Date _____ Class _____

California Standards NS2.1, NS2.2, NS2.4, AF1.1

LESSON 4-6

Practice

Solving Equations Containing Fractions

Solve. Write each answer in simplest form.

1. $t - \frac{3}{7} = \frac{4}{7}$ _____

2. $g - \frac{5}{16} = \frac{3}{16}$ _____

3. $k - \frac{3}{10} = \frac{2}{5}$ _____

4. $n + \frac{1}{7} = \frac{2}{3}$ _____

5. $j + \frac{5}{6} = \frac{17}{18}$ _____

6. $f + \frac{5}{12} = \frac{3}{4}$ _____

7. $\frac{1}{4}s = \frac{3}{4}$ _____

8. $\frac{1}{5}a = \frac{1}{2}$ _____

9. $\frac{4}{5}h = \frac{8}{9}$ _____

10. $p - \frac{2}{3} = \frac{5}{8}$ _____

11. $d - \frac{3}{5} = \frac{7}{10}$ _____

12. $y - \frac{2}{7} = 3\frac{1}{4}$ _____

13. $c + \frac{5}{12} = 2\frac{1}{6}$ _____

14. $w + \frac{4}{15} = 3\frac{1}{3}$ _____

15. $z + \frac{6}{7} = 2\frac{3}{5}$ _____

16. $\frac{5}{6}m = \frac{8}{9}$ _____

17. $\frac{1}{2}x = 3\frac{7}{15}$ _____

18. $\frac{1}{5}r = 2\frac{2}{3}$ _____

19. Sarabeth ran $1\frac{2}{5}$ miles on a path around the park. This was $\frac{5}{8}$ of the distance around the park. What is the distance around the park?

_____

20. An interior decorator bought $12\frac{1}{2}$ yards of material to make drapes. He used $8\frac{2}{3}$ yards on 1 pair of drapes. How much material does he have left?

_____

Name _____ Date _____ Class _____

California Standards Extension of NS2.3

LESSON 4-7

Practice

Adding, Subtracting and Multiplying Decimals

Add or subtract. Estimate to check whether each answer is reasonable.

1. 6.14 + 8.91 _____

2. 4.51 + 13.08 _____

3. 12.54 + 21.08 _____

4. 34.22 + (−18.5) _____

5. 10.10 + 5.9 _____

6. 6.87 + 31.6 _____

7. 9 + 5.68 _____

8. 15.51 − 8.55 _____

9. 36.36 + 54.54 _____

10. 6.23 − 3.62 _____

11. 8.67 − 6.87 _____

12. 28.94 − 9.48 _____

13. 23.57 − 6.84 _____

14. 16.61 − 7.56 _____

15. 32.08 − 12.37 _____

Multiply. Estimate to check whether each answer is reasonable.

16. 2.8 · 8.2 _____

17. 7 · 6.42 _____

18. 1.9 · 7.22 _____

19. 5.3 · 8.4 _____

20. 7.16 · 0.03 _____

21. 1.56 · 7.8 _____

22. 4.6 · 3.1 _____

23. 0.62 · 1.45 _____

24. 5.74 · 1.9 _____

25. Jordan jogged 4.8 miles each day for 21 days last month. How many miles did she jog last month?

_____

Name _____ Date _____ Class _____

California Standards Extension of NS2.3

LESSON 4-8

Practice

Dividing Decimals

Divide.

1. 6 ÷ 0.25

2. 78.74 ÷ 12.7

3. 734.8 ÷ −1.67

4. 56.525 ÷ 0.85

5. 44.22 ÷ (−6.7)

6. − 6.46 ÷ 0.04

Divide. Estimate to check whether your answer is reasonable.

7. 63 ÷ (−4.5)

8. 8 ÷ 3.2

9. 87 ÷ 7.25

10. − 36 ÷ 1.6

11. 42 ÷ 4.8

12. 90 ÷ 0.36

13. Freddie used 6.75 gallons of gas to drive 155.25 miles. What was his car's gas mileage?

14. The members of a book club met at a restaurant for dinner. The total bill was $112.95 and they shared the bill equally. Each person paid $12.55. How many members are there in the book club?

Name _____ Date _____ Class _____

California Standards AF2.1

LESSON 4-9

Practice

Metric Measurements

Choose the most appropriate metric unit for each measurement. Justify your answer.

1. The capacity of a paper cup

_____

_____

_____

_____

2. The mass of a small poodle.

_____

_____

_____

_____

3. The width of a computer screen

_____

_____

_____

_____

4. The mass of a pencil

_____

_____

_____

_____

Convert each measure.

5. 496 mm to centimeters

_____

6. 0.68 kg to grams

_____

7. 3,800 mL to liters

_____

8. 832 mg to grams

_____

9. 76 km to meters

_____

10. 2.9 cm to meters

_____

11. 0.041kL to liters

_____

12. 14.9 g to milligrams

_____

13. 7,800 cm to meters

_____

14. Sam's laptop computer has a mass of 4.2 kg. Fred's laptop computer has a mass of 4,940 grams. Which computer has the lesser mass? Explain your answer.

_____

15. Elise makes a poster that is 1.5 m tall. Meg makes a poster that is 96 cm tall. Who makes a taller poster? Explain your answer.

_____

Name _____ Date _____ Class _____

California Standards AF1.1

LESSON 4-10

Practice

Solving Equations Containing Decimals

Solve.

1. $t + 0.77 = 9.3$

2. $p - 1.34 = -11.8$

3. $r + 2.14 = 7.8$

4. $3.65 + e = -1.4$

5. $w - 16.7 = 8.27$

6. $z - 17.2 = 7.13$

7. $p - 67.5 = 24.81$

8. $h + 26.9 = 12.74$

9. $k + 89.2 = -47.62$

10. $x - 0.45 = 5.97$

11. $1.08 + n = 15.72$

12. $y - 6.32 = 0.73$

13. $4.3p = 28.81$

14. $7.7j = 76.23$

15. $3.8g = -104.12$

16. $18.36 = 2.7y$

17. $99.96 = 6.8x$

18. $293.92 = 17.6c$

19. $\frac{e}{7.4} = 6.9$

20. $\frac{f}{12.7} = 15.6$

21. $\frac{d}{9.7} = 20.8$

22. $\frac{w}{-0.2} = 15.4$

23. $\frac{m}{9.8} = 1.7$

24. $\frac{s}{14.35} = -5.2$

25. Jeff paid a flat fee of $269.50 for a year's worth of vet visits for his 4 cats. He made 14 visits during the year. What was the average cost per visit?

Name _____ Date _____ Class _____

California Standards NS1.2

LESSON 5-1

Practice

Ratios

The annual dog show has 22 collies, 28 boxers, and 18 poodles. Write each ratio in all three forms.

1. collies to poodles

2. boxers to collies

3. poodles to boxers

4. poodles to collies

The Franklin School District has 15 art teachers, 27 math teachers, and 18 Spanish teachers. Write the given ratio in all three forms.

5. art teachers to math teachers

6. math teachers to Spanish teachers

7. Spanish teachers to all teachers

8. art and math teachers to Spanish teachers

9. Thirty-two students are asked whether the school day should be longer. Twenty-four vote "no" and 8 vote "yes." Write the ratio of "no" votes to "yes" votes in simplest form.

10. A train car has 64 seats. There are 48 passengers on the train. Write the ratio of seats to passengers in simplest form.

11. Tell whose CD collection has the greater ratio of rock CDs to total CDs.

	Glen	Nina
Classical CDs	4	8
Rock CDs	9	12
Other CDs	5	7

Name _____ Date _____ Class _____

California Standards NS1.2, AF2.2, AF2.3

LESSON 5-2

Practice

Rates

1. A part-time job pays $237.50 for 25 hours of work. How much money does the job pay per hour? _____

2. A class trip consists of 84 students and 6 teachers. How many students per teacher are there? _____

3. A factory builds 960 cars in 5 days. What is the average number of cars the factory produces per day? _____

4. The Wireless Cafe charges $5.40 for 45 minutes of Internet access. How much money does The Wireless Cafe charge per minute? _____

5. A bowler scores 3,152 points in 16 games. What is his average score in points per game? _____

6. Melissa drives 238 miles in 5 hours. What is her average rate of speed? _____

7. An ocean liner travels 1,233 miles in 36 hours. What is the ocean liner's average rate of speed? _____

8. A plane is scheduled to complete a 1,792-mile flightin 3.5 hours. In order to complete the trip on time, what should be the plane's average rate of speed? _____

9. The Nuthouse sells macadamia nuts in three sizes. The 12 oz jar sells for $8.65, the 16 oz jar sells for $10.99, and the 24 oz gift tin costs $16.99. Which size is the best buy? _____

10. Nina paid $37.57 for 13 gallons of gas. Fred paid $55.67 for 19 gallons of gas. Eleanor paid $48.62 for 17 gallons of gas. Who got the best buy? _____

Name _____ Date _____ Class _____

California Standards NS1.2

LESSON 5-3

Practice

Identifying and Writing Proportions

Determine whether the ratios are proportional.

1. $\frac{3}{4}, \frac{24}{32}$ _____

2. $\frac{5}{6}, \frac{15}{18}$ _____

3. $\frac{10}{12}, \frac{20}{32}$ _____

4. $\frac{7}{10}, \frac{22}{30}$ _____

5. $\frac{9}{6}, \frac{21}{14}$ _____

6. $\frac{7}{9}, \frac{24}{27}$ _____

7. $\frac{4}{10}, \frac{6}{15}$ _____

8. $\frac{7}{12}, \frac{13}{20}$ _____

9. $\frac{4}{9}, \frac{6}{12}$ _____

10. $\frac{7}{8}, \frac{14}{16}$ _____

11. $\frac{9}{10}, \frac{45}{50}$ _____

12. $\frac{3}{7}, \frac{10}{21}$ _____

Find a ratio equivalent to each ratio. Then use the ratios to write a proportion.

13. $\frac{7}{9}$ _____

14. $\frac{11}{12}$ _____

15. $\frac{14}{15}$ _____

16. $\frac{35}{55}$ _____

17. $\frac{14}{10}$ _____

18. $\frac{25}{18}$ _____

Name _____ Date _____ Class _____

California Standards NS1.3, AF2.2, AF2.3

LESSON 5-4

Practice

Solving Proportions

Use cross products to solve each proportion.

1. $\frac{2}{5} = \frac{x}{35}$

2. $\frac{7}{r} = \frac{1}{4}$

3. $\frac{k}{75} = \frac{9}{15}$

4. $\frac{1}{3} = \frac{z}{27}$

5. $\frac{2}{11} = \frac{12}{d}$

6. $\frac{24}{s} = \frac{4}{12}$

7. $\frac{w}{42} = \frac{6}{7}$

8. $\frac{t}{54} = \frac{2}{9}$

9. $\frac{3}{8} = \frac{a}{64}$

10. $\frac{17}{34} = \frac{7}{f}$

11. $\frac{15}{h} = \frac{5}{6}$

12. $\frac{4}{15} = \frac{36}{c}$

13. $\frac{z}{25} = \frac{12}{5}$

14. $\frac{36}{k} = \frac{9}{4}$

15. $\frac{5}{14} = \frac{n}{42}$

16. $\frac{8}{9} = \frac{40}{m}$

17. $\frac{7}{c} = \frac{63}{54}$

18. $\frac{24}{21} = \frac{s}{35}$

19. $\frac{e}{22} = \frac{6}{15}$

20. $\frac{3}{v} = \frac{12}{17}$

21. $\frac{5}{14} = \frac{4}{a}$

22. Eight oranges cost $1.00. How much will 5 dozen oranges cost?

23. A recipe calls for 2 eggs to make 10 pancakes. How many eggs will you need to make 35 pancakes?

Name _____ Date _____ Class _____

California Standards NS1.3, AF2.1

LESSON 5-5

Practice

Customary Measurements

Choose the most appropriate customary unit for each measurement.
Justify your answer.

1. the weight of a paperback book

_____

_____

2. the capacity of a large soup pot

_____

_____

3. the length of a dining room table

_____

_____

4. the weight of an elephant

_____

_____

Convert each measure.

5. 6 mi to feet

_____

6. 104 oz to pounds

_____

7. 12 qt to pints

_____

8. 5,000 lb to tons

_____

9. 48 yd to feet

_____

10. 96 fl oz to pints

_____

11. 6.5 ft to inches

_____

12. 20 qt to gallons

_____

13. $3\frac{1}{4}$ lb to ounces

_____

14. One mile is about 1.61 kilometers. The volcano Mauna Kea is 120 km wide. What is the width of the volcano in miles, rounded to the nearest tenth of a mile?

_____

15. A 1-pound weight has a mass of about 0.45 kilograms. A car weighs 2100 pounds. What is the mass of the car in kilograms, rounded to the nearest tenth of a kilogram?

_____

Name _____ Date _____ Class _____

California Standards Preparation for NS1.3

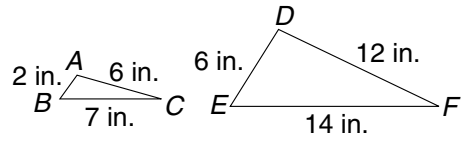
LESSON 5-6

Practice

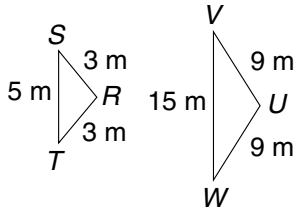
Similar Figures and Proportions

Identify the corresponding sides in each pair of triangles. Then use ratios to determine whether the triangles are similar.

1.



2.



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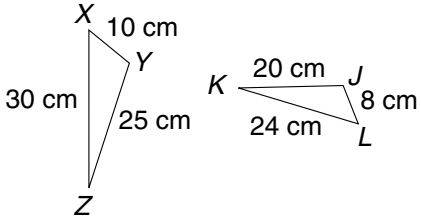
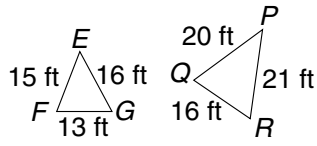
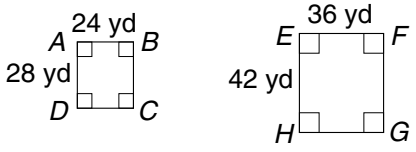


4.

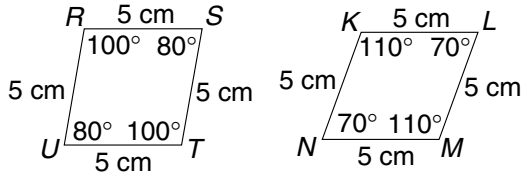


Use the properties of similarity to determine whether the figures are similar.

5.



6.



Name _____ Date _____ Class _____

California Standards NS1.3

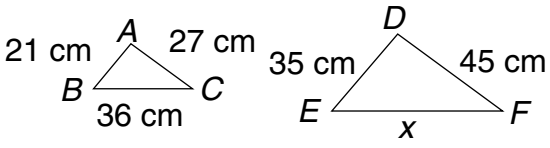
LESSON 5-7

Practice

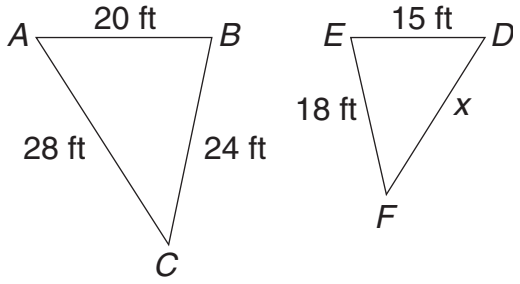
Using Similar Figures

$\Delta ABC \sim \Delta DEF$ in each pair. Find the unknown lengths.

1.

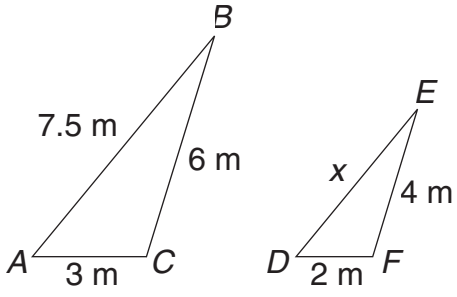


2.

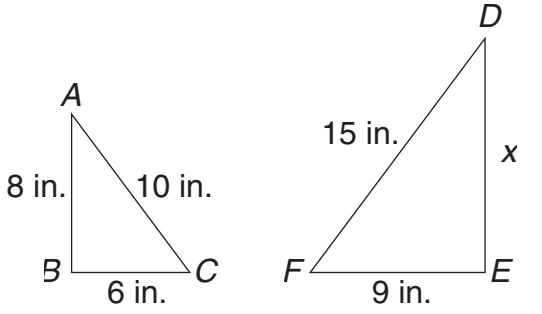


_____ _____

3.

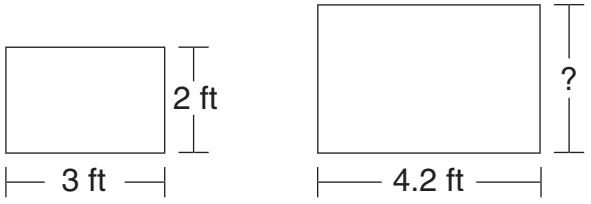


4.



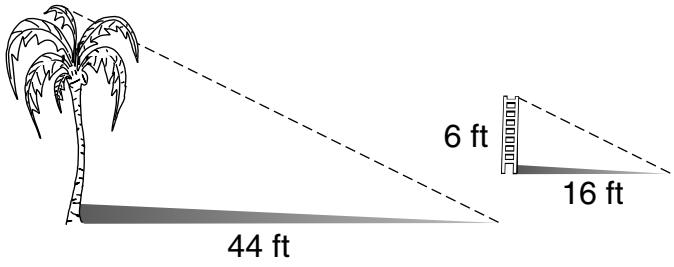
_____ _____

5. The two rectangular picture frames at the right are similar. What is the height of the larger picture frame?



_____

6. A palm tree casts a shadow that is 44 feet long. A 6-foot ladder casts a shadow that is 16 feet long. Use Estimate the height of the palm tree.



_____

Name _____ Date _____ Class _____

California Standards NS1.3

LESSON 5-8

Practice

Scale Drawings and Scale Models

Identify the scale factor.

1.

	Alligator	Toy Alligator
Length (in.)	175	7

2.

	Airplane	Model
Length (ft)	24	3

3.

	Car	Toy Car
Length (ft)	13.5	1.5

4.

	Person	Action Figure
Height (in.)	66	6

5.

	Boat	Model
Length (in.)	128	8

6.

	Fish	Fishing Lure
Length (in.)	18	2

7.

	Tiger	Stuffed Animal
Length (in.)	70	14

8.

	House	Dollhouse
Height (ft)	39.2	2.8

9. On a scale drawing, a school is 1.6 feet tall. The scale factor is $\frac{1}{22}$. Find the height of the school. _____

10. On a road map of Pennsylvania, the distance from Philadelphia to Washington, D.C., is 6.8 centimeters. What is the actual distance between the cities if the map scale is 2 centimeters = 40 miles? _____

11. On a scale drawing, a bicycle is $6\frac{4}{5}$ inches tall. The scale factor is $\frac{1}{6}$. Find the height of the bicycle. _____

Name _____ Date _____ Class _____

California Standards Preparation for NS1.4, NS2.4

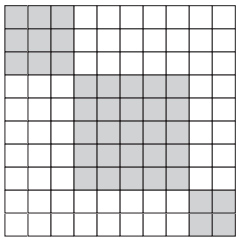
LESSON 6-1

Practice

Introduction to Percents

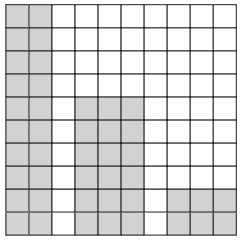
Write the percent modeled by each grid.

1.



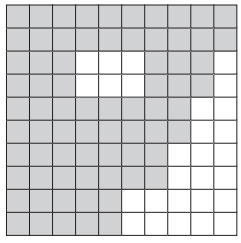
_____

2.



_____

3.



_____

Write each percent as a fraction in simplest form.

4. 16% _____

5. 49% _____

6. 20% _____

7. 15% _____

8. 18% _____

9. 60% _____

10. 35% _____

11. 46% _____

12. 86% _____

13. 79% _____

14. 56% _____

15. 45% _____

Write each percent as a decimal.

16. 33% _____

17. 57% _____

18. 46% _____

19. 6% _____

20. 4.7% _____

21. 13.2% _____

22. 75.8% _____

23. 4% _____

24. 1.16% _____

25. 27.05% _____

26. 93.01% _____

27. 7.9% _____

Name _____ Date _____ Class _____

California Standards Preparation for NS1.4

LESSON 6-2

Practice

Fractions, Decimals, and Percents

Write each decimal as a percent.

1. 0.17 _____

2. 0.56 _____

3. 0.04 _____

4. 0.7 _____

5. 0.025 _____

6. 0.803 _____

7. 0.3 _____

8. 0.072 _____

Write each fraction as a percent.

9. $\frac{13}{40}$ _____

10. $\frac{3}{5}$ _____

11. $\frac{3}{20}$ _____

12. $\frac{5}{12}$ _____

13. $\frac{5}{16}$ _____

14. $\frac{3}{80}$ _____

15. $\frac{5}{6}$ _____

16. $\frac{19}{25}$ _____

17. In a survey, 60 baseball fans were asked whether they thought the designated hitter rule should be changed. Forty-one fans thought the rule should be changed. What percent of the fans surveyed said that the designated hitter rule should be changed?

_____

18. The police use a speed gun to monitor one part of a highway. During one hour, 6 out of 25 cars were traveling above the speed limit. What percent of the cars were traveling above the speed limit?

_____

Name _____ Date _____ Class _____

California Standards NS1.4, NS2.1

LESSON 6-3

Practice

Estimating with Percents

Use a fraction to estimate the percent of each number.

1. 21% of 82 _____

2. 35% of 42 _____

3. 47% of 164 _____

4. 9% of 68 _____

5. 65% of 78 _____

6. 11% of 92 _____

7. 26% of 124 _____

8. 89% of 51 _____

9. 77% of 198 _____

10. 5% of 75 _____

11. 31% of 148 _____

12. 53% of 539 _____

13. In 2004, about $38 out of every $100 spent on advertising was spent on television advertising. The amount spent on radio advertising was about 21% as much as was spent on television advertising. How much of every $100 spent on advertising was spent on radio advertising? _____

Use 1% or 10% to estimate the percent of each number.

14. 32% of 46 _____

15. 81% of 36 _____

16. 15% of 44 _____

17. 21% of 62 _____

18. 3% of 72 _____

19. 62% of 88 _____

20. 12% of 48 _____

21. 65% of 124 _____

22. 18% of 147 _____

23. 5% of 837 _____

24. 37% of 213 _____

25. 2% of 188 _____

26. The Fresh Acres Swim Club has a $35,000 budget for pool maintenance this year. The club members have agreed to raise the budget by 4%. Estimate the pool maintenance budget for next year. _____

Name _____ Date _____ Class _____

California Standards NS1.3, NS1.4

LESSON 6-4

Practice

Percent of a Number

Find the percent of each number.

1. 25% of 56 _____

2. 10% of 110 _____

3. 5% of 150 _____

4. 90% of 180 _____

5. 125% of 48 _____

6. 225% of 88 _____

7. 2% of 350 _____

8. 285% of 200 _____

9. 150% of 125 _____

10. 46% of 235 _____

11. 78% of 410 _____

12. 0.5% of 64 _____

Find the percent of each number. Check whether your answer is reasonable.

13. 55% of 900 _____

14. 140% of 50 _____

15. 75% of 128 _____

16. 3% of 600 _____

17. 16% of 85 _____

18. 22% of 105 _____

19. 0.7% of 110 _____

20. 95% of 500 _____

21. 3% of 750 _____

22. 162% of 250 _____

23. 18% of 90 _____

24. 23.2% of 125 _____

25. 0.1% of 950 _____

26. 11% of 300 _____

27. 52% of 410 _____

28. 250% of 12 _____

29. The largest frog in the world is the goliath, found in West Africa. This type of frog can grow to be 12 inches long. The smallest frog in the world is about 4% as long as the goliath. What is the approximate length of the smallest frog in the world?

_____

Name _____ Date _____ Class _____

California Standards NS1.3, NS1.4, AF1.1

LESSON 6-5

Practice

Solving Percent Problems

1. 50 is 40% of what number?

2. 12 is 25% of what number?

3. 18 is what percent of 60?

4. 12 is what percent of 96?

5. 4% of what number is 25?

6. 80% of what number is 160?

7. What percent of 55 is 22?

8. What percent of 75 is 6?

9. 15 is 30% of what number?

10. 8% of what number is 2?

11. 7 is what percent of 105?

12. 24 is 40% of what number?

13. 10% of what number is 14?

14. 16 is what percent of 200?

15. What percent of 32 is 4?

16. What percent of 150 is 60?

17. 1% of what number is 11?

18. 20% of what number is 14?

19. The sales tax on a $750 computer at J & M Computers is $48.75. What is the sales tax rate?

20. A hardcover book sells for $24 at The Bookmart. Ben pays a total of $25.02 for the book. What is the sales tax rate?

Name _____ Date _____ Class _____

California Standards NS1.4

LESSON 6-6

Practice

Percent of Change

Find each percent of change. Round answers to the nearest tenth, if necessary.

1. 20 is decreased to 11 _____

2. 24 is increased to 30 _____

3. 56 is decreased to 14 _____

4. 25 is increased to 100 _____

5. 18 is increased to 45 _____

6. 90 is decreased to 75 _____

7. 126 is decreased to 48 _____

8. 65 is increased to 144 _____

9. 42 is increased to 72 _____

10. 84 is decreased to 8 _____

11. 95 is increased to 145 _____

12. 248 is decreased to 200 _____

13. 105 is decreased to 32 _____

14. 75 is increased to 350 _____

15. 93 is decreased to 90 _____

16. 16 is decreased to 2 _____

17. A backpack that normally sells for $39 is on sale for 33% off. Find the amount of the discount and the sale price.

_____

18. A sporting goods store is having a closeout on a certain style of running shoes. They are marked 55% off the regular price. The regular price is $79.95. Find the amount of the discount and the sale price.

_____

19. A gallery owner purchased a very old painting for $3,000. The painting sells at a 325% increase in price. What is the retail price of the painting?

_____

20. In August, the Simons' water bill was $48. In September, it was 15% lower. What was the Simons' water bill in September?

_____

Name _____ Date _____ Class _____

California Standards NS1.4, AF1.1

LESSON 6-7

Practice

Simple Interest

Find each missing value.

1. P = \$1,500, r = 5%, t = 3 years

I = _____

2. P = \$6,000, r = 4%, t = 2 years

I = _____

3. I = \$30, r = 4%, t = 2 years

P = _____

4. I = \$180, r = 5%, t = 3 years

P = _____

5. I = \$20, P = \$250, t = 2 years

r = _____

6. I = \$144, P = \$800, t = 3 years

r = _____

7. P = \$525, r = 3%, t = 1 year

I = _____

8. P = \$3,200, r = 6%, t = 4 years

I = _____

9. I = \$450, r = 6%, t = 4 years

P = _____

10. I = \$1,440, r = 3%, t = 5 years

P = _____

11. I = \$1,275, P = \$5,100, t = 5 years

r = _____

12. I = \$3,920, P = \$14,000, t = 4 years

r = _____

13. P = \$1,300, r = 4.5%, t = 6 months

I = _____

14. I = \$47.25, r = 3.5%, t = 1.5 years

P = _____

15. I = \$891, P = \$2,700, t = 5.5 years

r = _____

16. I = \$126, P = \$400, t = 9 years

r = _____

17. You deposit \$2,500 in an account that earns 4% simple interest. How long will it be before the total amount is \$3,000? _____

18. You deposit \$5,000 in account that earns 6.5% simple interest. How much will be in the account after 3 years? _____

19. A deposit of \$10,000 was made to an account the year you were born. After 12 years, the account is worth \$16,600. What simple interest rate did the account earn? _____

20. How long will it take for \$6,500 to double at a simple interest rate of 7%? Round to the nearest tenth of a year. _____

Name _____ Date _____ Class _____

California Standards SDAP1.1

LESSON 7-1

Practice

Mean, Median, Mode, and Range

Find the mean of each data set.

1.

Brian's Math Test Scores	86	90	93	85	79	92

2.

Heights of Basketball Players (in.)	72	75	78	72	73

Find the mean, median, mode, and range of each data set.

3.

School Sit-Up Records (sit-ups per minute)	31	28	30	31	30

4.

Team Heart Rates (beats per min)	70	68	70	72	68	66

5.

Daily Winter Temperatures (°F)	45	50	47	52	53	45	51

6. Anita has two sisters and three brothers. The mean of all their ages is 6 years. What will their mean age be 10 years from now? Twenty years from now?

7. In a class of 28 sixth graders, all but one of the students are 12 years old. Which two data measurements are the same for the student's ages? What are those measurements?

Name _____ Date _____ Class _____

California Standards SDAP1.1, SDAP1.2, SDAP1.3

LESSON 7-2

Practice

Additional Data and Outliers

Use the table to answer Exercises 1–3.

1. The table shows population data for some of the least-crowded states. Find the mean, median, and mode of the data.

_____

_____

2. Alaska has the lowest population density of any state. Only about 1 person per square mile lives there. Add this number to the data in the table and find the mean, median, and mode.

_____

_____

3. In Exercise 1, why is Alaska's population density an outlier for that data set?

_____

_____

Population Densities

State	People (per mi^2)
Idaho	16
Nevada	18
New Mexico	15
North Dakota	9
South Dakota	10

Use the table to answer Exercises 4–5.

4. The table shows some of the states with the most counties. Find the mean, median, and mode of the data.

_____

_____

5. With 254 counties, Texas has more counties than any other state. Add this number to the data in the table and find the mean, median, and mode.

_____

_____

State Counties

State	Number of Counties
Illinois	102
Iowa	99
North Carolina	100
Tennessee	95
Virginia	95

Name _____ Date _____ Class _____

California Standards SDAP1.1, SDAP1.3, SDAP1.4

LESSON 7-3

Practice

Choosing the Most Useful Measure

Jenny plays for the Tigers basketball team. The list shows the number of points that the team scored in their last ten games. Use the data for Exercises 1-4.

18	62	21	24	22	23	25	18	30	22

1. Find the mean of the data. _____

2. Find the median of the data. _____

3. Jenny wants to know the typical number of points the team scored. Is the mean or the median more useful? Why?

_____

_____

4. Jenny wants to convince a friend that the Tigers deserve to go to the playoffs. Should she use the mean or the median to describe the data? Why?

_____

_____

Tyrell is shopping for an MP3 player. The list shows the prices of eight MP3 players. Use the data for Exercises 5–9.

$165	$145	$200	$180	$48	$180	$150	$160

5. Find the mean of the data. _____

6. Find the median of the data. _____

7. Find the mode of the data. _____

8. Tyrell wants to convince his father that MP3 players are not too expensive and that he should get one for his birthday. Should he use the mean, median, or mode to describe the data? Why?

_____

9. Suppose Tyrell wants to convince someone that MP3 players are too expensive. Which measure should he use in this case? Why?

_____

Name _____ Date _____ Class _____

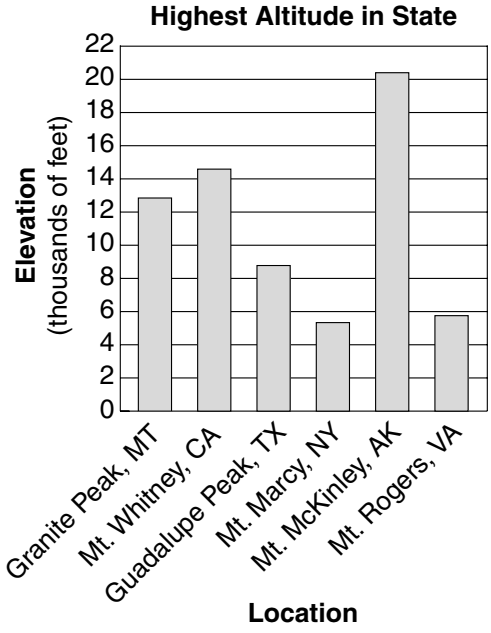
California Standards SDAP2.3, SDAP2.5

LESSON 7-4

Practice

Analyzing Data Displays

The bar graph shows the elevations of the highest points in several states. Use the graph for Exercises 1–3.



1. Which state has the highest elevation?

_____

2. About how much higher is Granite Peak than Guadalupe Peak?

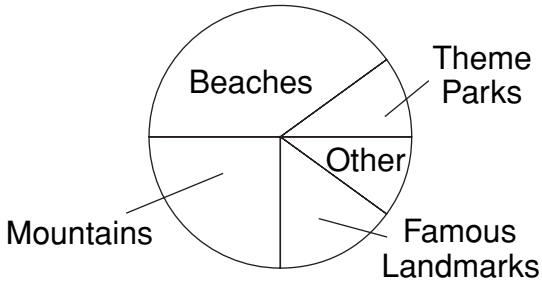
_____

3. About how much higher is Mount Whitney than Mount Marcy?

_____

The circle graph below shows the results of a survey of 100 people. They were asked about their favorite vacation destinations. Use the graph for Exercises 4–6.

Favorite Vacation Destinations



4. Did more people pick mountains or beaches?

_____

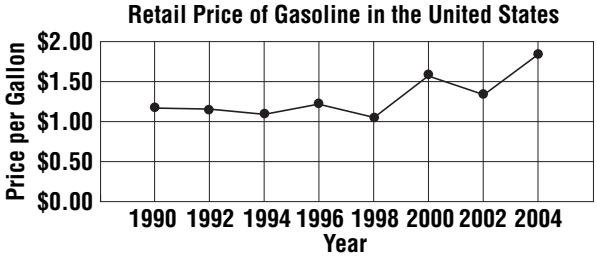
5. About what percent of people picked mountains?

_____

6. According to the survey, 15% of the people chose famous landmarks. How many people chose famous landmarks?

_____

The line graph shows the price of gasoline in the U.S. over several years. Use the graph for Exercises 7–8.



7. When did the cost of gasoline decrease the most?

_____

8. About how much did gasoline cost in 1995?

_____

Name _____ Date _____ Class _____

California Standards SDAP2.3, SDAP2.5

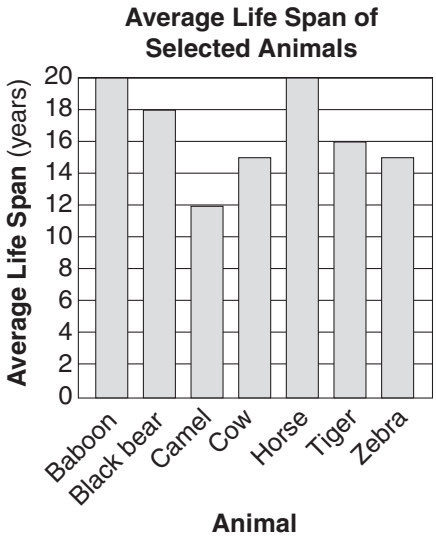
LESSON 7-5

Practice

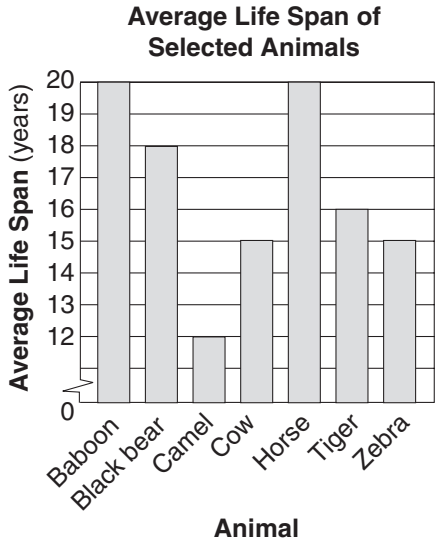
Misleading Graphs

1. Which graph could be misleading? Why?

Graph A



Graph B

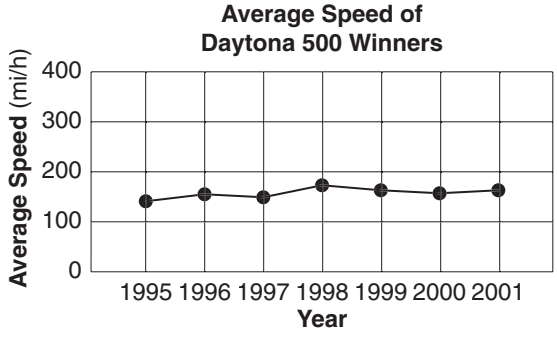


_____

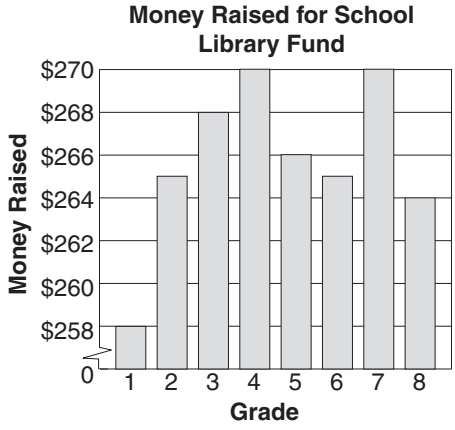
_____

Explain why each graph could be misleading.

2.



3.



_____ _____

_____ _____

_____ _____

Name _____ Date _____ Class _____

California Standards NS1.3, SDAP2.1, SDAP2.5

LESSON 7-6

Practice

Populations and Samples

For each situation, explain whether it makes sense to use a sample.

1. The mayor of a town wants to know the average salary of the town's residents.

_____

2. The mayor of a town wants to know the average salary of the six people on her staff.

_____

According to the U.S. Census Bureau, about 55% of all U.S. households have Internet access. Daljit surveys a random sample of households in two cities. His data is shown in the table.

Internet Access

Sample	Households with Access	Households without Access
City A	22	18
City B	14	36

3. How does the sample for City A compare to the national percentage?

_____

4. How does the sample for City B compare to the national percentage?

_____

The doctor estimates that more than 220 of the 500 patients in his database take a vitamin each day. A random sample of 60 patients shows that 27 of them take a vitamin each day.

5. Use a proportion to predict the total number of patients who take a vitamin each day. _____

6. Is the doctor's estimate likely to be valid? _____

7. The doctor's assistant claims that at least 350 of the 500 patients have seen the doctor in the past year. A random survey of 45 patients shows that 18 have seen the doctor in the past year. Is the assistant's claim likely to be valid? Explain.

_____

_____

Name _____ Date _____ Class _____

California Standards SDAP2.2

LESSON 7-7

Practice

Selecting Samples

Identify the sampling method that is used in each situation.

1. Ronny wants to know how often the average resident of his town of his town eats out. He surveys 45 people as they leave a restaurant. _____

2. A worker in a factory checks every 100th car part as it moves past her on an assembly line. _____

Manuel and Carolyn survey customers of a car wash to find out if they are satisfied. They use the methods shown in the table.

Car-Wash Survey

Sampling Method	Results Survey
Manuel calls every 25th name on a list of customers.	70% say they are satisfied.
Carolyn makes survey cards available to customers who wish to fill them out.	40% say they are satisfied.

3. Describe the sampling methods that Manuel and Carolyn used.

_____

4. Whose sampling method will better represent the entire population? _____

Lynne and LeVon survey members of a health club to find out how many members visit the club at least once a week.

Car-Wash Survey

Sampling Method	Results Survey
Lynne surveys 50 members while they are using the equipment at the club.	85% say they visit the club at least once a week.
LeVon telephones 60 members chosen at random from the club's database.	65% say the visit the club at least once a week.

5. Describe the sampling methods that Lynne and LeVon used.

_____

6. Whose sampling method will better represent the entire population? _____

Name _____ Date _____ Class _____

California Standards SDAP2.3, SDAP2.4, SDAP2.5

LESSON 7-8

Practice

Identifying Sampling Errors and Bias

Determine whether each sample may be biased. Explain.

1. Mr. Chu puts the names of all his students in a hat and chooses 12 names without looking. He surveys these students about the amount of time they spend studying.

_____

2. The editor of a computer magazine wants to know how much time the average American spends surfing the Web. The editor sends a survey to 2000 people who subscribe to the magazine.

_____

_____

Determine whether each survey question may be biased. Explain.

3. Do you prefer the new and improved Tasty-O's or the original version?

_____

4. Which candidate will you vote for in the upcoming mayoral election?

_____

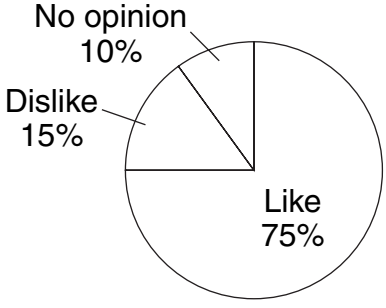
Alicia wants to know what students at her school think of the film *Hero-Man III.* Use the information below and the graph to answer each question.

Sample: 80 students chosen at random from the school directory

Question: What is your opinion of this summer's blockbuster hit *Hero-Man III?*

Claim: A majority of students like the film.

Results:



5. Is the sample or question biased? Why?

_____

_____

6. Is Alicia's claim valid? Why or why not?

_____

Name _____ Date _____ Class _____

California Standards SDAP3.3

LESSON 8-1

Practice

Introduction to Probability

Determine whether each event is impossible, unlikely, as likely as not, likely, or certain.

1. rolling an even number on a number cube labeled 1 through 6 _____

2. picking a card with a vowel on it from a box of cards in which each letter of the alphabet is written on a card _____

3. spinning a number greater than 2 on a spinner with 10 equal sections marked 1 through 10 _____

4. drawing a red marble from a bag of black, blue, and green marbles _____

5. flipping a coin and getting heads or tails _____

6. rolling a number that is less than three 5 times in a row on number on a number cube labeled 1 through 6 _____

Solve.

7. A bag contains 3 green marbles, 7 blue marbles, and 2 black marbles. The probability of randomly picking a green marble is $\frac{1}{4}$. What is the probability of not picking a green marble? _____

8. A spinner has 8 equal sections labeled 1 through 8. The probability of spinning a number that is greater than or equal to 6 is $\frac{3}{8}$. What is the probability of spinning a number that is not greater than or equal to 6? _____

9. The probability of randomly drawing a red card from a bag that contains red, blue, and green cards is $\frac{3}{10}$. What is the probability of not drawing a red card? _____

10. Myra almost always spends at least 45 minutes on the treadmill. If Myra got on the treadmill at 5:20 P.M., estimate the probability that she will still be on the treadmill at 6:00. _____

11. Morris rarely arrives home before 4:00 P.M. It is now 3:20 P.M. Estimate the probability that Morris will arrive home in the next 30 minutes. _____

Name _____ Date _____ Class _____

California Standards SDAP3.2, SDAP3.3

LESSON 8-2

Practice

Experimental Probability

Find the experimental probability. Write your answer as a fraction, as a decimal, and as percent.

1. Jaclyn is a soccer goalie. If she has 21 out of 25 saves in practice, what is the experimental probability that she will have a save on the next shot on goal? _____

2. If Harris hit the bull's-eye 3 out of 8 times at archery practice, what is the experimental probability that he will hit the bull's-eye on his next try? _____

3. Nathan inspects new pants at a factory. Of the first 56 pairs of pants he inspected 49 were acceptable. What is the experimental probability that the next pairs of pants will be acceptable? _____

4. Sara has gone to work for 60 days. On 39 of those days she arrived at work before 8:30 A.M. On the rest of the days she arrived after 8:30 A.M. What is the experimental probability that she will arrive at work after 8:30 A.M. the next day she goes to work? _____

Solve:

5. After a movie premiere, 99 of the first 130 people surveyed said they liked the movie.

   a. What is the experimental probability that the next person surveyed will say he or she liked the movie? _____

   b. What is the experimental probability that the next person surveyed will say he or she did not like the movie? _____

6. For the past 30 days, Naomi has been recording the number of customers at her restaurant between 10 A.M. and 11 A.M. During that hour, there have been fewer than 20 customers on 25 out of 30 days.

   a. What is the experimental probability that there will be fewer than 20 customers on the thirty-first day? _____

   b. What is the experimental probability that that there will be more than 20 customers on the thirty-first day? _____

7. For the past four weeks, Nestor has been recording the daily high temperatures. During that time, the high temperature has been below 45° on 20 out of 28 days. What is the experimental probability that the high temperature will be below 45° on the twenty-ninth day? _____

Name _____ Date _____ Class _____

California Standards SDAP3.3

LESSON 8-3

Practice

Theoretical Probability

Find the probability of each event. Write your answer as a fraction, as a decimal, and as a percent. Round to the nearest tenth of a percent.

1. randomly choosing a white counter from a bag of 12 red counters, 12 white counters, 12 green counters, and 12 blue counters

_____

2. tossing two fair coins and having one land on tails and one land on heads

_____

3. rolling a number greater than 1 on a fair number cube

_____

4. randomly drawing an orange disk from a bag of 14 black disks, 4 blue disks and 12 orange disks

_____

5. randomly drawing 1 of the 6 R's from a bag of 100 letter tiles

_____

6. spinning a number less than 7 on a fair spinner with 8 equal sections labeled 1-8

_____

A set of cards has 20 cards with stars, 10 cards with squares, and 15 cards with circles. Find the probability of each event when a card is chosen at random.

7. square _____

8. circle _____

9. star or circle _____

10. not circle or square _____

There are 14 girls and 18 boys in Ms. Wiley's class. Ms. Wiley randomly selects one student to solve a problem. Find the probability of each event.

11. selecting a boy _____

12. selecting a girl _____

Name _____ Date _____ Class _____

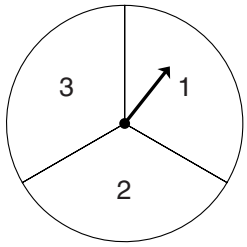
California Standards SDAP3.1, SDAP3.3

LESSON 8-4

Practice

Sample Spaces

1. Marcus spins the spinner at the right and flips a dime at the same time. What is the theoretical probability of each outcome?



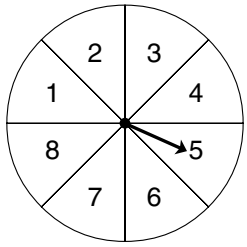
_____

_____

2. For lunch, students have a choice of a hot dog, a hamburger, or pizza and a choice of an apple, a pear, or grapes. If Britney picks a sack lunch at random from a tray that contains one lunch of each type, what is the probability that she will choose a lunch with pizza and grapes?

_____

3. Susan and Ryan are playing a game that involves spinning the spinner at the right and flipping a penny. What is the probability that the penny will land on heads and the spinner will stop on 2?



_____

4. An Italian restaurant offers small, medium, and large calzones. The choices of fillings are cheese, sausage, spinach, or vegetable. How many different calzones can you order?

_____

5. There are 5 ways to go from Town X to Town Y. There are 3 ways to go from Town Y to Town Z. How many different ways are there to go from Town X to Town Z, passing through Town Y?

_____

6. Rasheed has tan pants, black pants, gray pants, and blue pants. He has a brown sweater and a white sweater. How many different ways can he wear a sweater and pants together?

_____

Name _____ Date _____ Class _____

California Standards SDAP3.1, SDAP3.4

LESSON 8-5

Practice

Disjoint Events

Determine whether each set of events is disjoint. Explain.

1. choosing a pencil or a pen from a backpack that contains pencils, pens, highlighters, and felt-tip markers

_____

_____

2. choosing an even number or a multiple of 4 from among the numbers 1–20.

_____

_____

Find the probability of each set of disjoint events.

3. rolling an odd number or a 6 on a number cube _____

4. choosing a vowel or a *P* from the letters in the word *apple* _____

5. choosing a peanut or a cashew from a bowl that contains only 10 peanuts, 5 cashews, and 10 pistachios _____

6. choosing an even number or a 7 from among the numbers 1–10 _____

Amanda rolls two number cubes. She wins a prize if the product of the numbers rolled is 12 or 30.

7. Complete the grid to show the sample space.

8. Find the probability that Amanda will win a prize.

_____

Second Number Cube \ First Number Cube	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	4	6	8	10	12
3						
4						
5						
6						

Name _____ Date _____ Class _____

California Standards SDAP3.3, SDAP3.4, SDAP3.5

LESSON 8-6

Practice

Independent and Dependent Events

Decide if each set of events is independent or dependent. Explain your answer.

1. A student spins a spinner and chooses a Scrabble® tile

_____

_____

2. A boy chooses a sock from a drawer of socks, then chooses a second sock without replacing the first.

_____

_____

3. A student picks a raffle ticket from a box, replaces the ticket, then picks a second raffle ticket.

_____

_____

Find the probability of each set of independent events.

4. drawing a red checker from a bag of 9 black checkers and 6 red checkers, replacing it, and drawing another red checker

_____

5. drawing a black checker from a bag of 9 black checkers and 6 red checkers, replacing it, and drawing a red checker

_____

6. rolling a 1, 2, or 3 on the first roll of a 1–6 number cube and rolling a 4, 5, or 6 on the second roll of the same cube

_____

Solve.

7. Randy has 4 pennies, 2 nickels, and 3 dimes in his pocket. If he randomly selects a coin, replaces it, then makes another random selection, what is the probability that both are dimes?

_____

Name _____ Date _____ Class _____

California Standards NS1.3, SDAP3.2, SDAP3.3

LESSON 8-7

Practice

Making Predictions

Use the sample survey to make predictions.

Favorite Sports

Sport	Number of Students
Football	28
Basketball	35
Soccer	20
Baseball	45
Hockey	15
Other	7

1. If you randomly selected a person, what is the probability that his or her favorite sport is basketball?

_____

2. In a group of 200 people, how many do you predict would choose baseball as their favorite sport?

_____

3. In a class of 45 students, how many students do you predict would choose soccer as their favorite sport?

_____

4. In a group of 100 people, how many do you predict would choose hockey as their favorite sport?

_____

5. Based on a sample survey, a local newspaper states that 75% of all the city's voters turned out for the city council elections. If you randomly selected 200 people in that city, how many do you predict would have voted in the election?

_____

6. If you roll a fair number cube 30 times, how many times would you expect to roll an odd number?

_____

7. Based on a sample survey, a company claims that 8% of its customers were unhappy with the DVD players they bought. If the company sold DVD players to 2,000 people last year, how many of those customers do you predict were unhappy with their DVDs?

_____

8. If you toss a fair coin 48 times, how many times do you predict it will land tails up?

_____

Name _____ Date _____ Class _____

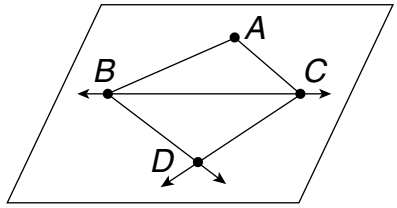
California Standards Preparation for MG2.1

LESSON 9-1

Practice

Introduction to Geometry

Identify the figures in the diagram.



1. three points _____

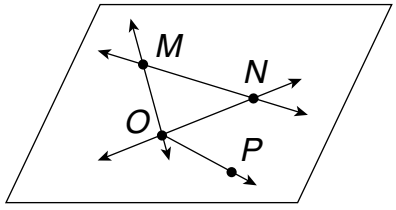
2. one line _____

3. a plane _____

4. four rays _____

5. three line segments _____

Identify the figures in the diagram.



6. four points _____

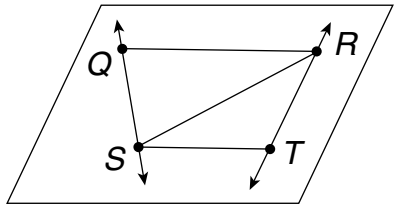
7. three lines _____

8. a plane _____

9. three rays _____

10. four line segments _____

Identify the figures in the diagram.



11. four points _____

12. two lines _____

13. a plane _____

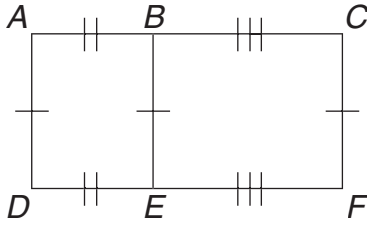
14. four rays _____

15. five line segments _____

16. Identify the line segments that are congruent in the figure.

_____

_____



Name _____ Date _____ Class _____

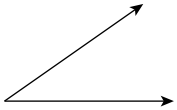
California Standards Preparation for MG2.1 and MG2.3

LESSON 9-2

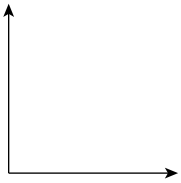
Practice

Measuring and Classifying Angles

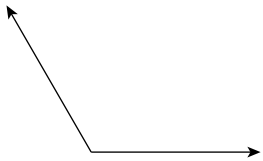
Use a protractor to measure each angle.

1. 

_____

2. 

_____

3. 

_____

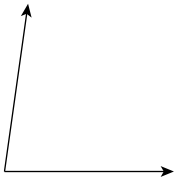
Use a protractor to draw an angle with each given measure.

4. 70°

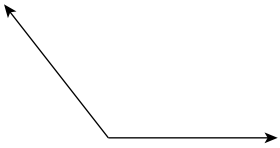
5. 115°

6. 45°

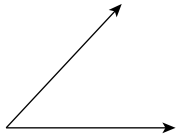
Classify each angle as acute, right, obtuse, or straight.

7. 

_____

8. 

_____

9. 

_____

10. The frame for a kite has two angles that together form a right angle. What type of angle is each of those angles? Explain.

_____

_____

11. What kinds of angles are in each of the letters in this word? **TAXI**

_____

_____

Name _____ Date _____ Class _____

California Standards MG2.1

LESSON 9-3

Practice

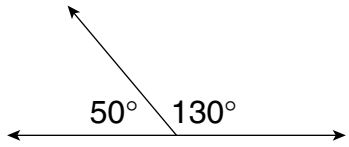
Angle Relationships

Identify the type of each angle pair shown.

1.

_____

2.



_____

Use the diagram to tell whether the angles are complementary, supplementary, or neither.

3. $\angle AQC$ and $\angle GQC$

_____

4. $\angle BQD$ and $\angle DQE$

_____

5. $\angle CQE$ and $\angle EQF$

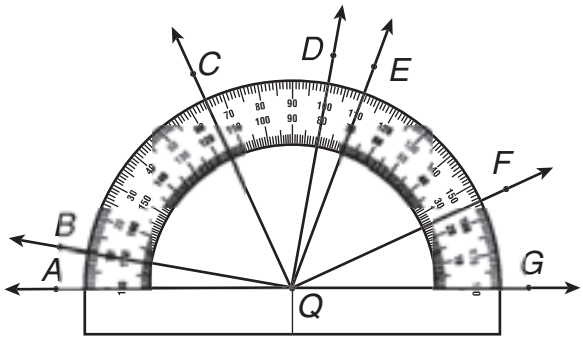
_____

6. $\angle GQF$ and $\angle FQE$

_____

7. $\angle BQC$ and $\angle DQC$

_____



Name _____ Date _____ Class _____

California Standards AF1.1, MG2.1, MG2.2

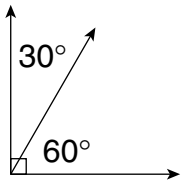
LESSON 9-4

Practice

Finding Angle Measures

Identify the type of each angle pair shown.

1.



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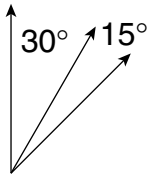
2.



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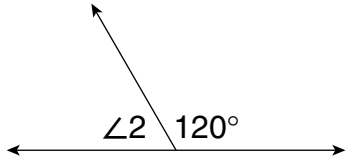
Find each unknown angle measure.

3. The angles are supplementary.



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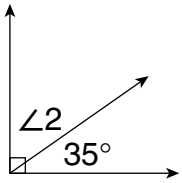
4. The angles are complementary.



_____

5. Angles *W* and *X* are supplementary. If m∠*W* is 37°, what is m∠*X*? _____

6. Angles *S* and *T* are complementary. If m∠*S* is 64°, what is m∠*T*? _____

7. Angles *C* and *D* are supplementary. If m∠*C* is 83°, what is m∠*D*? _____

8. Angles *U* and *V* are complementary. If m∠*U* is 41°, what is m∠*V*? _____

9. Is the following statement always true, sometimes true, or never true? Explain your reasoning. Two congruent angles that are complementary both measure 45°.

_____

_____

Name _____ Date _____ Class _____

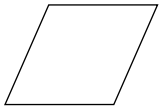
California Standards Preparation for MG2.3

LESSON 9-5

Practice

Classifying Polygons

Determine whether each figure is a polygon. Explain your answer.

1. 

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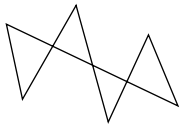
2. 

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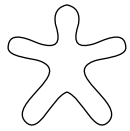
3. 

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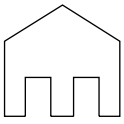
4. 

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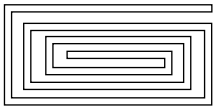
5. 

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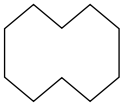
_____

6. 

_____

_____

Name each polygon.

7. 

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8. 

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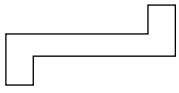
9. 

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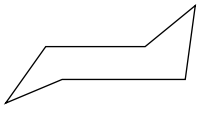
10. 

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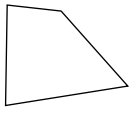
11. 

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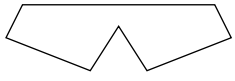
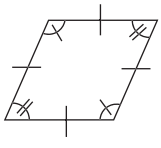
12. 

_____

Name each figure and tell whether it is a regular polygon. Explain your answer.

13. 

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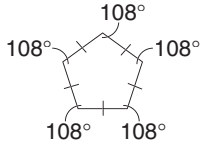
14. 

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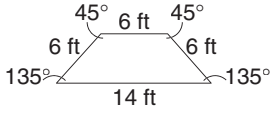
15. 

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Name _____ Date _____ Class _____

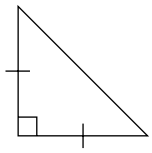
California Standards Preparation for MG2.3

LESSON 9-6

Practice

Classifying Triangles

Classify each triangle according to its sides and angles.

1. 

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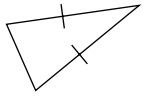
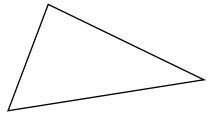
2. 

_____

3. 

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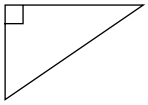
4. 

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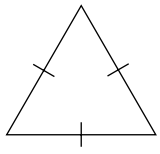
5. 

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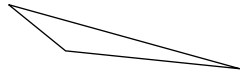
6. 

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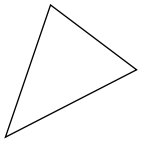
7. 

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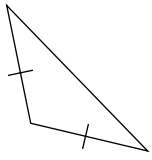
8. 

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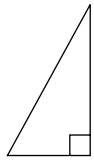
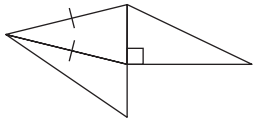
9. 

_____

Identify the different types of triangles in each figure and determine how many of each there are.

10. 

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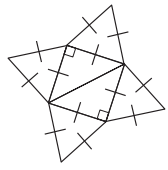
11. 

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Name _____ Date _____ Class _____

California Standards AF1.1, MG2.1, MG2.2

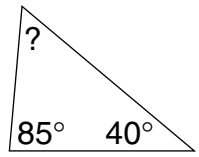
LESSON 9-7

Practice

Angle Measures in Triangles

Find the unknown angle measure in each triangle.

1.



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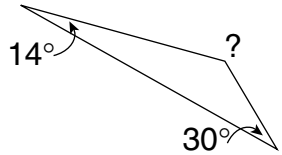
2.



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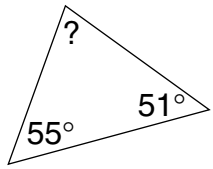
3.



_____

Use the diagram to find the measure of each indicated angle.

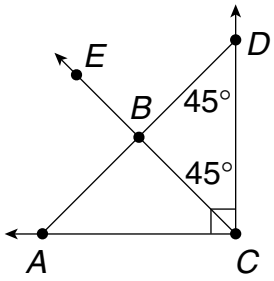
4. $\angle CBD$ _____

5. $\angle DAC$ _____

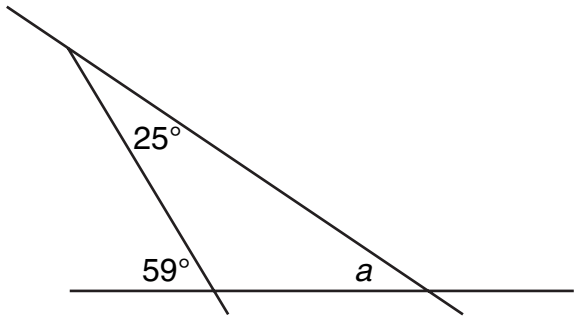
6. $\angle ABC$ _____

7. $\angle EBA$ _____

8. $\angle ACB$ _____



9. The figure shows a design for a new intersection. Find the unknown angle measure *a.* Show your work.



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Name _____ Date _____ Class _____

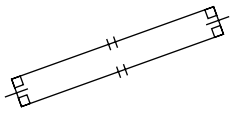
California Standards MG2.3

LESSON 9-8

Practice

Classifying Quadrilaterals

Give all of the names that apply to each quadrilateral. Then give the name that best describes it.

1. 

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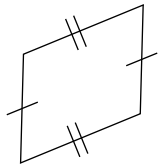
2. 

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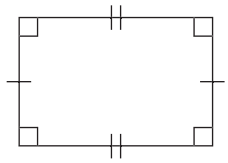
3. 

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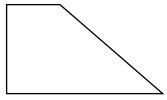
4. 

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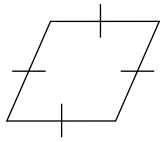
5. 

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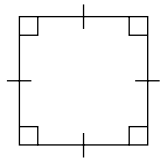
6. 

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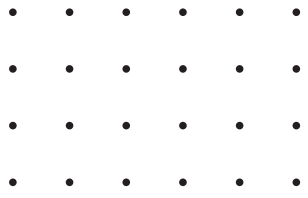
Draw each figure. If it is not possible to draw, explain why.

7. A rectangle that is not a parallelogram.



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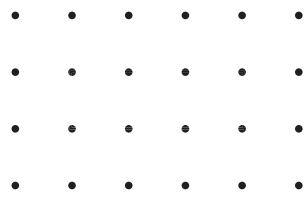
8. A rectangle that is not a square.



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Name _____ Date _____ Class _____

California Standards Extension of MG2.2

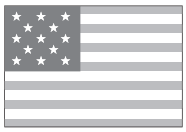
LESSON 9-9

Practice

Congruent Figures

Identify any figures that appear to be congruent.

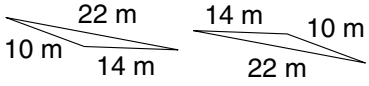
1.



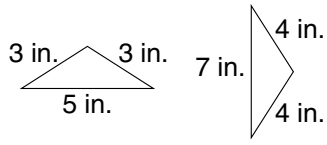
2.

Determine whether the triangles are congruent.

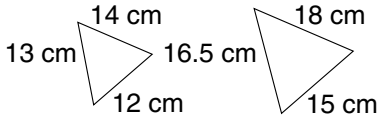
3.



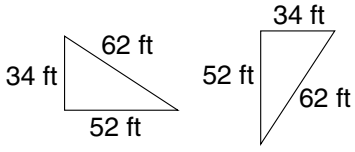
4.



5.

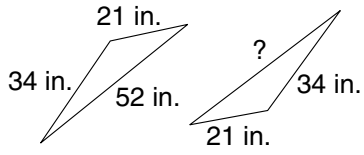


6.

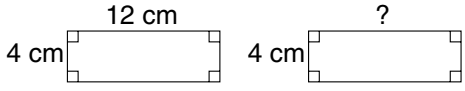


Determine the missing measure or measures in each set of congruent polygons.

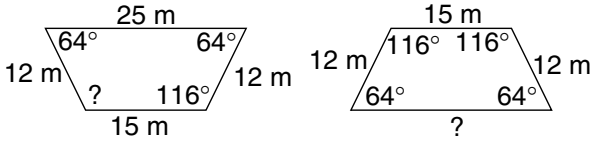
7.



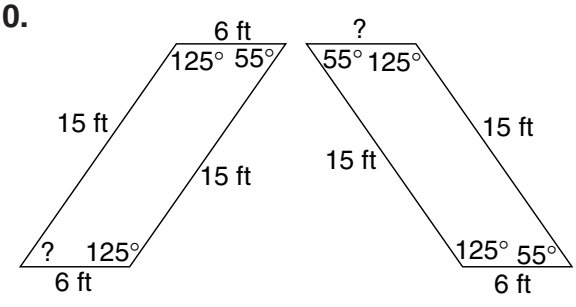
8.



9.



10.



Name _____ Date _____ Class _____

California Standards AF1.1, AF1.2, AF3.1, AF3.2

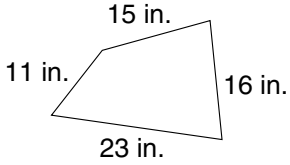
LESSON 10-1

Practice

Perimeter

Find the perimeter of each figure.

1.



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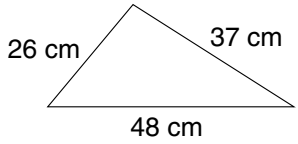
2.



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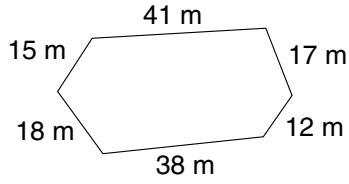
3.



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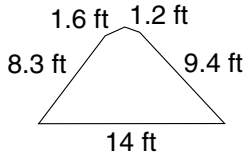
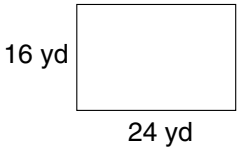
4.



_____

Find the perimeter *P* of each parallelogram.

5.



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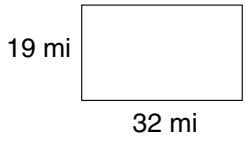
6.



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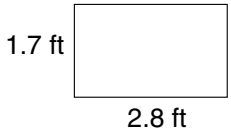
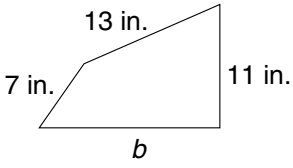
7.



_____

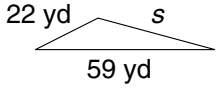
Find each unknown measure.

8. What is the length of side *b* if the perimeter equals 47 in.?



_____

9. What is the length of side *s* if the perimeter equals 119 yd?



_____

10. Benjamin is putting a fence around his rectangular-shaped yard. The yard is 38 feet long and 27 feet wide. How many feet of fencing does Benjamin need to surround his entire yard?

_____

11. If you drove from Bakersville to Salem and then to San Mateo, your entire 81-mile journey would form a triangle. The distance from Salem to San Mateo is 24 miles. The distance from Bakersville to San Mateo is 40 miles. How many miles is it from Salem to Baskerville?

_____

Name _____ Date _____ Class _____

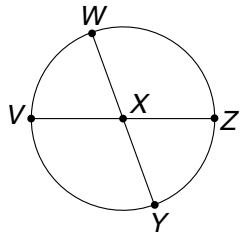
California Standards AF1.1, AF3.1, AF3.2, MG1.1, MG1.2

LESSON 10-2

Practice

Circles and Circumference

Use the circle to answer each question.



1. Name the circle. _____

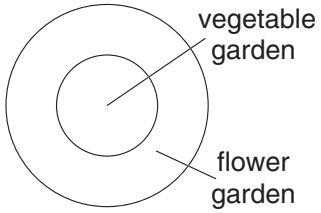
2. Name two diameters.

_____

3. Name four radii.

_____

A gardener is putting in a circular garden. The inner circle is a vegetable garden, and the outer circle is a flower garden. Find the circumference by using $\frac{22}{7}$ as an estimate for π.



4. If the diameter of the vegetable garden is 6 feet, what is its circumference to the nearest hundredth?

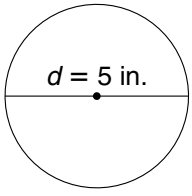
$C \approx$ _____

5. If the radius of the flower garden is 8 feet, what is its circumference to the nearest hundredth?

$C \approx$ _____

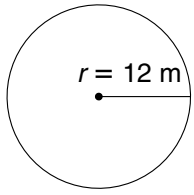
Find each missing value to the nearest hundredth. Use 3.14 as an estimate for π.

6.



$C =$ _____

7.



$C =$ _____

8. The first Ferris wheel was built in 1893 in Chicago. Its diameter was 250 feet. How many feet did the Ferris wheel rotate with each complete turn? Use 3.14 as an estimate for π.

_____

9. Stonehenge, a circle of large carved stones in England, was built more than 1,000 years ago. The circle of stones has a diameter of 108 feet. What is the circumference of Stonehenge?

_____

Name _____ Date _____ Class _____

California Standards NS2.1, AF1.1, AF2.1, AF3.1, AF3.2

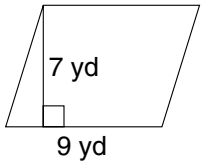
LESSON 10-3

Practice

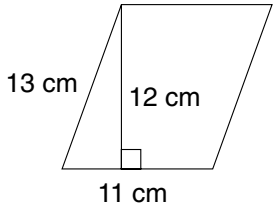
Area of Parallelograms

Find the area of each parallelogram.

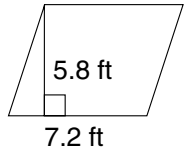
1.



2.



3.



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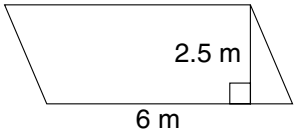
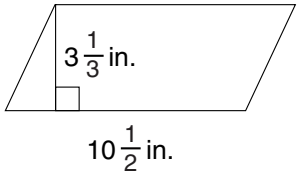
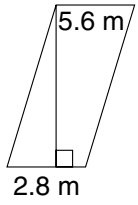


5.

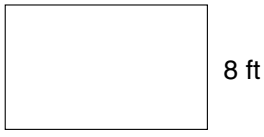


6.



Find the area of each rectangle.

7.



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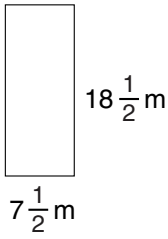

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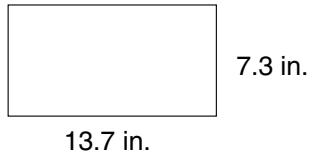


10. A dollar bill is 15.5 cm long and 6.5 cm wide. What is the area of a dollar bill?

11. A rectangular hallway has an area of 70 ft^2. The width of the hallway is 4 feet. What is the length of the hallway?

Name _____ Date _____ Class _____

California Standards AF1.2, AF3.1, AF3.2

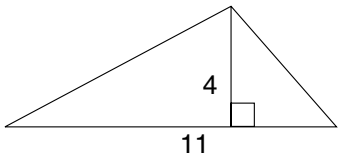
LESSON 10-4

Practice

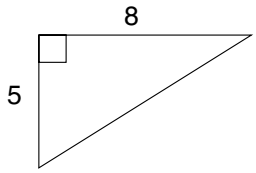
Area of Triangles and Trapezoids

Find the area of each triangle.

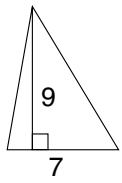
1.



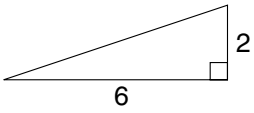
2.



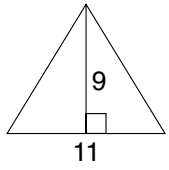
3.



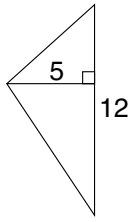
4.



5.

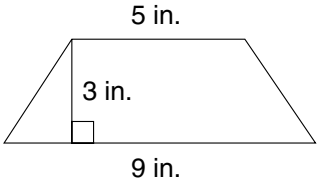


6.

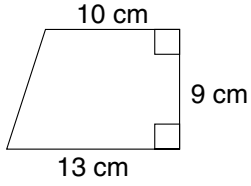


Find the area of each trapezoid.

7.



8.



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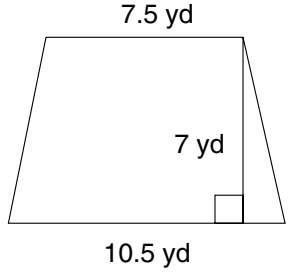

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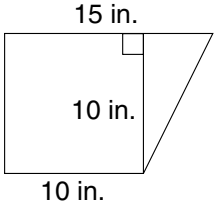
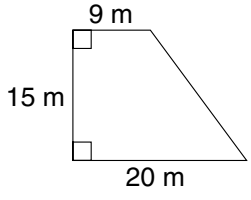
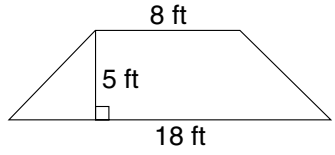


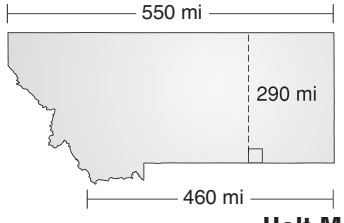
11.



12.



13. The state of Montana is shaped somewhat like a trapezoid. What is the approximate area of Montana?



Name _____ Date _____ Class _____

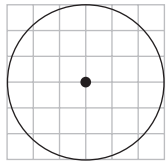
California Standards AF3.1, AF3.2, MG1.1, MG1.2

LESSON 10-5

Practice

Area of Circles

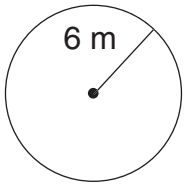
1. Find the area of the circle by using a formula. Use 3.14 as an estimate for π. Then use an estimate to check whether your answer is reasonable.



_____

Find the area of each circle to the nearest tenth. Use 3.14 as an estimate for π.

2.



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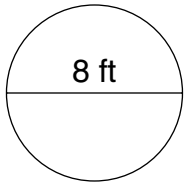
3.



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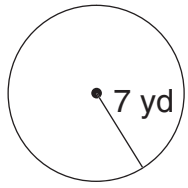
4.



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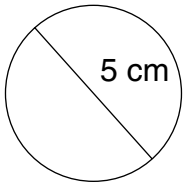
5.



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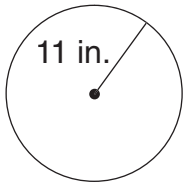
6.



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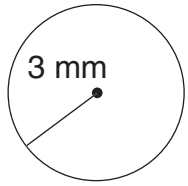
7.



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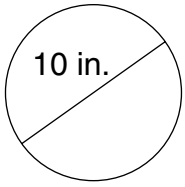
8.



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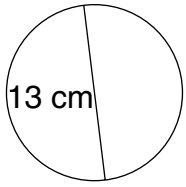
9.



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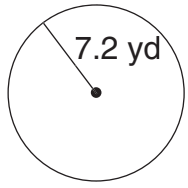
10.



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11. A Susan B. Anthony dollar coin has a diameter of 26.50 millimeters. What is the area of the coin to the nearest hundredth? Use 3.14 as an estimate for π. _____

12. A tablecloth for a round table has a radius of 21 inches. What is the area of the tablecloth? Use $\frac{22}{7}$ as an estimate for π. _____

Name _____ Date _____ Class _____

California Standards Extension of AF3.1, AF3.2, MG1.1, MG1.2

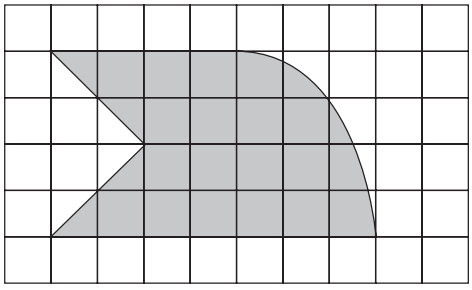
LESSON 10-6

Practice

Area of Irregular and Composite Figures

Estimate the area of each figure. Each square represents 1 square foot.

1.



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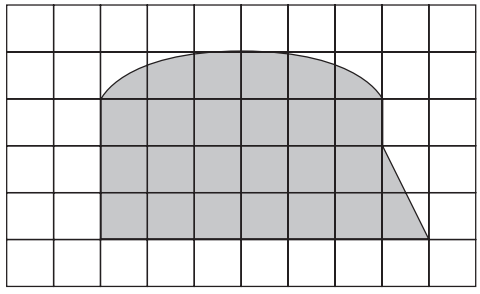
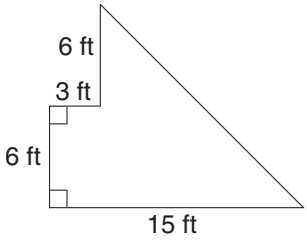
2.



_____

Find the area of each figure. Use 3.14 as an estimate for π.

3.



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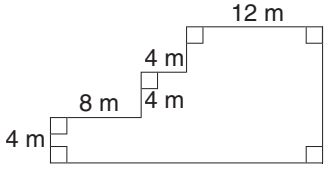
4.



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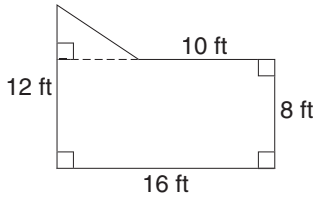
5.



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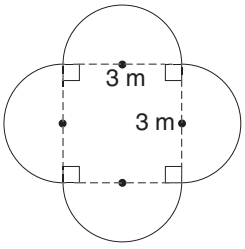
6.



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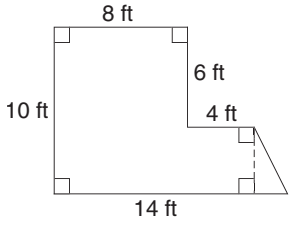
7.



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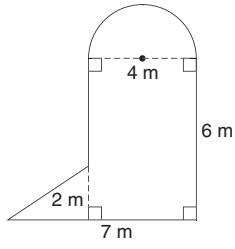
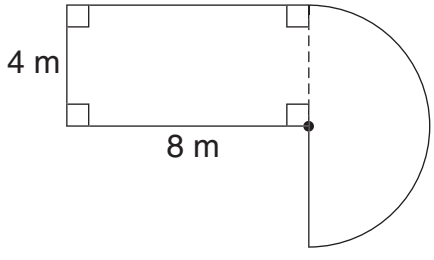
8.



_____

9. Marci is going to use tile to cover her terrace. How much tile does she need?

_____



Name _____ Date _____ Class _____

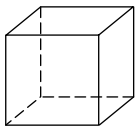
California Standards Preparation for MG1.3

LESSON 10-7

Practice

Three-Dimensional Figures

Identify the number of faces, edges, and vertices in each three-dimensional figure.

1. 

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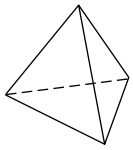
2. 

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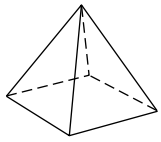
3. 

_____

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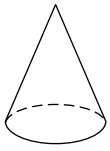
_____

Tell whether each figure is a polyhedron and name the three-dimensional figure.

4. 

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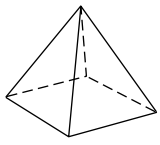
5. 

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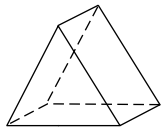
6. 

_____

_____

7. Kelly wants to make a box in the shape of a cube. How many pieces of wood does she need? In what shape should she cut them? Explain.

_____

8. Kwan made a sculpture in the shape of a polyhedron. It only has one base that is a triangle. What three-dimensional figure is her sculpture? Explain your reasoning.

_____

_____

Name _____ Date _____ Class _____

California Standards AF3.1, AF3.2, MG1.3

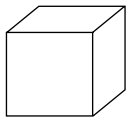
LESSON 10-8

Practice

Volume of Prisms

Find the volume of each rectangular prism.

1.



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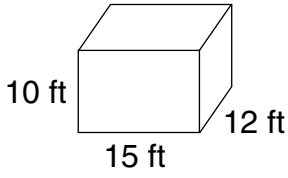
2.



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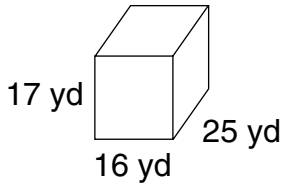
3.



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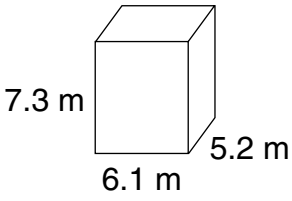
4.



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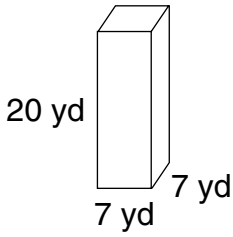
5.



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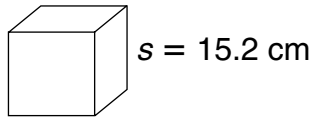
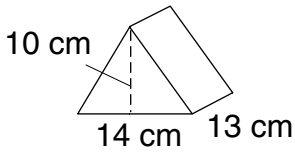


_____

Find the volume of each triangular prism.

7.



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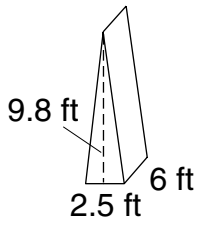
8.



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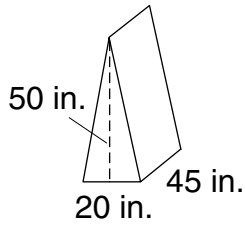
9.



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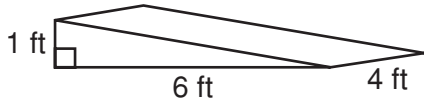
10. Peter is making a concrete ramp in the shape of a triangular prism. The ramp will have the dimensions shown. Peter has 10 ft^3 of concrete. Does he have enough concrete? Explain.



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Name _____ Date _____ Class _____

California Standards AF3.1, AF3.2, MG1.3

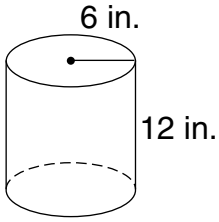
LESSON 10-9

Practice

Volume of Cylinders

Find the volume *V* of each cylinder to the nearest cubic unit.

1.



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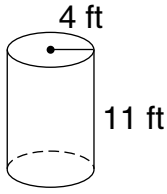
2.



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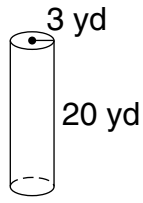
3.



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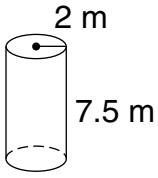
4.



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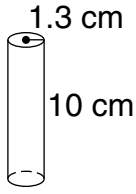
5.



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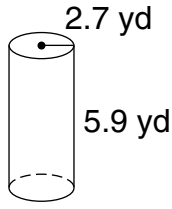
6.



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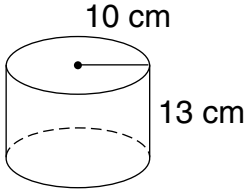
7.



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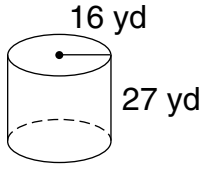
8.



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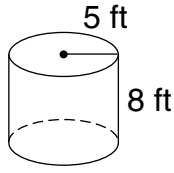
9.



_____

10. A cylindrical package of oatmeal is 20 centimeters tall. The diameter of its base is 10 centimeters. About how much oatmeal does the package hold?

_____

11. The volume of a can is about 50.24 in^3. The radius of its base is 2 inches. How tall is the can?

_____

Name _____ Date _____ Class _____

California Standards AF3.1, AF3.2

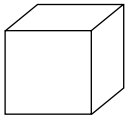
LESSON 10-10

Practice

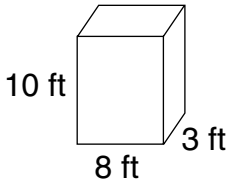
Surface Area

Find the surface area *S* of each prism.

1.

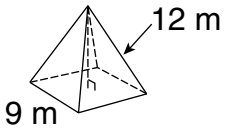


2.

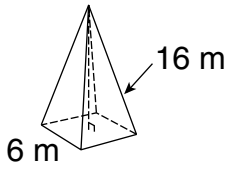


Find the surface area *S* of each pyramid.

3.

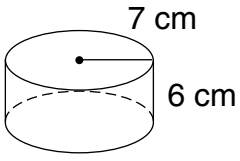


4.

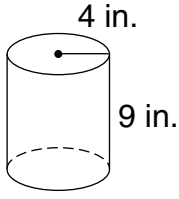


Find the surface area *S* of each cylinder. Write your answers in terms of π.

5.



6.



7. Why can you find an exact surface area measurement for a prism and pyramid but not for a cylinder?

8. The surface area of a rectangular prism is 48 square feet. The area of its front is 4 square feet, and the area of one side is 10 square feet. What is the area of the top of the prism?

Name _____ Date _____ Class _____

California Standards Preview of 7AF4.1

LESSON 11-1

Practice

Solving Two-Step Equations

Solve. Check each answer.

1. $7x + 8 = 36$

2. $-3y - 7 = 2$

3. $4a - 13 = 19$

4. $6a - 4 = -2$

5. $5k + 2 = 6$

6. $9m - 14 = -8$

Solve.

7. $\frac{v}{4} - 3 = 5$

8. $\frac{u}{5} + 3 = 1$

9. $6 + \frac{z}{9} = 9$

10. $-7 + \frac{f}{2} = -1$

11. $9 + \frac{w}{4} = -5$

12. $\frac{e}{7} - 3 = -5$

13. $-8 + \frac{d}{5} = 2$

14. $\frac{u}{5} + 3 = 6$

15. $\frac{f}{3} + 5 = 8$

16. Two years of local Internet service costs $685, including the installation fee of $85. What is the monthly fee?

_____

Name _____ Date _____ Class _____

California Standards Preview of 7AF1.3, AF1.2, AF3.1, AF3.2

LESSON 11-2

Practice

Simplifying Algebraic Expressions

Identify like terms in each list.

1. $3a \quad b^2 \quad b^3 \quad 4b^2 \quad 4 \quad 5a$

_____

2. $x \quad x^4 \quad 4x \quad 4x^2 \quad 4x^4 \quad 3x^2$

_____

3. $6m \quad 6m^2 \quad n^2 \quad 2n \quad 2 \quad 4m \quad 5n$

_____

4. $12s \quad 7s^4 \quad 9s \quad s^2 \quad 5 \quad 5s^4 \quad 2$

_____

Simplify. Justify your steps using the Commutative, Associative, and Distributive Properties when necessary.

5. $2p + 22q^2 - p$

_____

6. $x^2 + 3x^2 - 4^2$

_____

7. $n^4 + n^3 + 3n - n - n^3$

_____

8. $4a + 4b + 2 - 2a + 5b - 1$

_____

9. $32m^2 + 14n^2 - 12m^2 + 5n - 3$

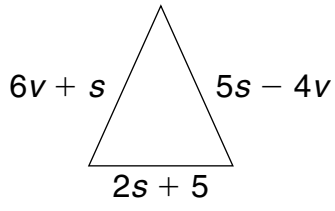
_____

10. $2h^2 + 3g - 2h^2 + 2^2 - 3 + 4g$

_____

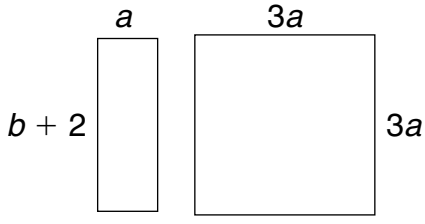
11. Write an expression for the perimeter of the figure at the right. Then simplify the expression.

_____



12. Write an expression for the combined perimeters of the figures at the right. Then simplify the expression.

_____



Name _____ Date _____ Class _____

California Standards Preview of 7AF1.3, Preview of 1A5.0

LESSON 11-3

Practice

Solving Multi-Step Equations

Solve.

1. $15x - 8 - 3x = 16$

2. $5n + 3 + 4n = 30$

3. $h - 6 + 7h = 42$

4. $-3g + 6 + 2g = 15$

5. $-2b + 7 - 3b = 2$

6. $5y + 1 + 3y = -15$

7. $4k - 14 + 3k = 21$

8. $9m + 10 - 14m = -5$

9. $-2d + 18 - 4d = 60$

10. $3(n + 5) + 2 = 26$

11. $4 - 2(v - 6) = -8$

12. $14 + 16(t + 6) = -18$

13. $4(m - 3) + 38 = 18$

14. $4 = 8(s - 1) - 20$

15. $5(c + 3) + 6 = 61$

16. Joel has twice as many CDs as Mariella has. Subtracting 7 from the number of CDs Joel has and dividing by 3 equals the number of CDs Blake has. If Blake has 25 CDs, how many CDs does Mariella have?

Name _____ Date _____ Class _____

California Standards Preview of 1A5.0

LESSON 11-4

Practice

Solving Equations with Variables on Both Sides

Group the terms with the variables on one side of the equal sign and simplify.

1. $10t = 6t + 24$

2. $-6x - 32 = 2x$

3. $j = 20 - 4j$

_____ _____ _____

4. $-5d + 40 = 5d$

5. $9m - 28 = 2m$

6. $\frac{8}{9}x = 8 + \frac{4}{9}x$

_____ _____ _____

Solve.

7. $8k = 6k - 26$

8. $32 - 5v = 3v + 8$

9. $-12y - 10 = -6y + 14$

_____ _____ _____

10. $\frac{5}{8}a + 6 = \frac{3}{4}a$

11. $\frac{1}{4}n + 10 = \frac{2}{3}n$

12. $20 + \frac{1}{5}d = \frac{7}{10}d + 16$

_____ _____ _____

13. Members of the Lake Shawnee Club pay $40 per summer season plus $7.50 each time they rent a boat. Nonmembers pay $12.50 each time they rent a boat. How many times would both a member and a nonmember have to rent a boat in order to pay the same amount? _____

Name _____ Date _____ Class _____

California Standards Preview of 7AF1.1

LESSON 11-5

Practice

Introduction to Inequalities

Write an inequality for each situation.

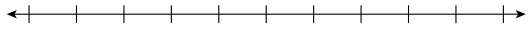
1. The temperature today will be at most 50°F. _____

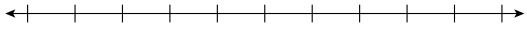
2. The temperature tomorrow will be above 70°F. _____

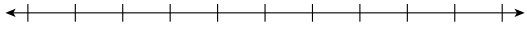
3. Yesterday, there was less than 2 inches of rain. _____

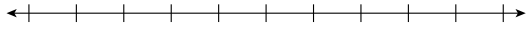
4. Last Monday, there was at least 3 inches of rain. _____

Graph each inequality.

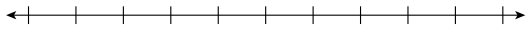
5. $t \leq -2$ 

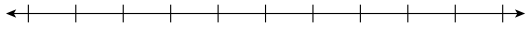
6. $j > -5$ 

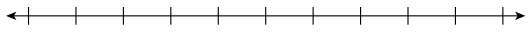
7. $y \leq 0$ 

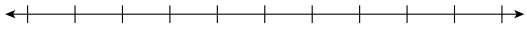
8. $b < \frac{1}{2}$ 

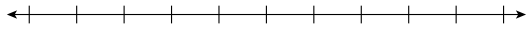
Graph each compound inequality.

9. $f > 3$ or $f < -2$ 

10. $-4 \leq w \leq 4$ 

11. $b < 0$ or $b \geq 5$ 

12. $y \geq 3$ or $y \leq -1$ 

13. $-4 < m < -2$ 

Name _____ Date _____ Class _____

California Standards Preview of 7AF4.0

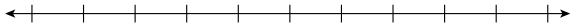
LESSON 11-6

Practice

Solving Inequalities by Adding or Subtracting

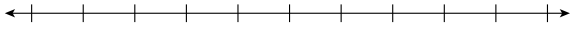
Solve. Then graph each solution set on a number line.

1. $y - 5 > -2$ _____

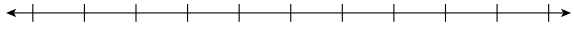


2. $n + 5 \leq 11$ _____

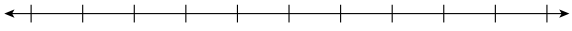
3. $x + 4 < -1$ _____



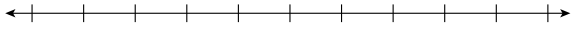
4. $h + 20 > 2$ _____



5. $p + 9 \geq -3$ _____



6. $s - 7 < -16$ _____



Solve. Check each answer.

7. $41 + g > 27$

_____

8. $w + 23 \geq -18$

_____

9. $a + 15 \leq 9$

_____

10. $z + 27 < 16$

_____

11. $-3 \leq t + 17$

_____

12. $78 \geq b + 64$

_____

13. In order for a field trip to be scheduled, at least 30 students must sign up. So far, 23 students have signed up. At least how many more students must sign up in order for the field trip to be scheduled?

_____

Name _____ Date _____ Class _____

California Standards Preview of 7AF4.0

LESSON 11-7

Practice

Solving Inequalities by Multiplying or Dividing

Solve.

1. $\frac{n}{5} \leq 1.6$

2. $\frac{b}{3} > -8$

3. $\frac{a}{3} \geq -9$

4. $\frac{t}{-6} < -7$

5. $\frac{s}{-12} \leq -5$

6. $\frac{r}{5.3} \leq 6$

Solve. Check each answer.

7. $8c < -64$

8. $-16a \geq -24$

9. $12t > 9$

10. $-3s \leq -180$

11. $18b > 24$

12. $6m \geq 4$

13. It cost Sophia $530 to make wind chimes. How many wind chimes must she sell at $12 apiece to make a profit?

14. It cost the Wilson children $55 to make lemonade. How many glasses must they sell at 75¢ each to make a profit?

15. Jorge's soccer team is having its annual fund raiser. The team hopes to earn at least three times as much as it did last year. Last year the team earned $87. What is the team's goal for this year?

Name _____ Date _____ Class _____

California Standards Preview of 7AF4.1

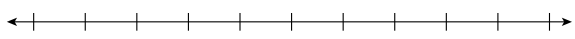
LESSON 11-8

Practice

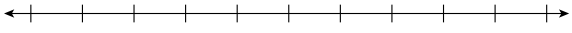
Solving Two-Step Inequalities

Solve. Then graph each solution set on a number line.

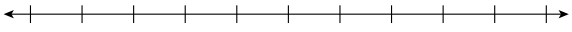
1. $5x - 8 < 17$ _____



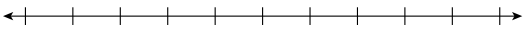
2. $\frac{r}{3} + 5 \geq 9$ _____



3. $-4n + 8 < -4$ _____

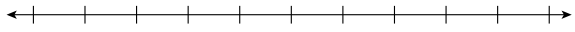


4. $\frac{z}{7} - 6 \geq -5$ _____



5. $\frac{w}{-5} + 4 < 9$ _____

6. $\frac{u}{2} - 5 \leq -9$ _____



Solve.

7. $-7d + 8 > 29$

_____

8. $4g - 18 \leq -2$

_____

9. $12 - 3b < 9$

_____

10. $\frac{a}{4} - 7 < -2$

_____

11. $9 + \frac{c}{6} \leq 17$

_____

12. $\frac{2}{3}p - 8 \geq 4$

_____

13. Fifty students in the seventh grade are trying to raise at least $2,000 for sports supplies. They have already raised $750. How much should each student raise, on average, in order to meet the goal?

_____