Summer
Math Exercises

*For students who
are entering*

Geometry

Cherokee Christian
SCHOOLS

It has been discovered that idle students lose learning over the summer months. To help you succeed next fall—and perhaps to help you learn some lessons that you did not learn the first time through—we have prepared the following packet of math exercises to be completed over the summer. It is clear that most students do not want to spend their entire summer doing math work. Based on how fast or slow you work, you may find that you only need to do math a few days a week. Working on this packet will be most effective if you do work throughout the summer so try not to skip weeks. You may use the following chart to get an idea of how often you might need to work problems:

		Into Geo	
	Problems:	174	

Min/Day	Min/Prob	Prob/Day	Sessions
60	2	30	6
60	3	20	9
60	5	12	15
45	2	22.5	8
45	3	15	12
45	5	9	19
30	2	15	12
30	3	10	17
30	5	6	29

For example, if you work on math for 60 minutes per session and took 2 minutes per problem, you could complete 30 problems a day. That would equate to only about 6 sessions of working math problems over the summer. At the other end of the spectrum, if you want to work only 30 minutes each time and took on average 5 minutes to complete each problem, you would only get 6 problems done during a session and would have to do about 29 sessions to complete the work (i.e., math work about every other day during the summer break). Note that students who learned the material previously should not take more than an average of 5 minutes to work a problem.

This work is **MANDATORY** for CCS students. Please follow these guidelines:

- Complete the problems assigned on the next page.

- Bring the completed work to the **first day of classes** so you will get credit.

- Use PENCIL and **write legibly**.

- **Do all your work on separate sheets of paper**. Note that some sections indicated that calculators are not to be used. Show your work for these problems as needed.

- Identify each section with a header (e.g, Lesson 1.1) and number each problem.

- Please circle your answers.

Assignment for students entering Geometry

Lessons	# of Probs	Assigned
1.1	11	1-33 every 3rd
1.2	10	3-30 every 3rd
1.3	10	3-30 every 3rd
1.4	10	3-30 every 3rd
2.1	10	3-30 every 3rd
2.2	10	3-30 every 3rd
2.3	10	3-30 every 3rd
3.2	9	1-25 every 3rd
3.3	8	4-25 every 3rd
3.4	10	1-10 all
4.3	12	1-12 all
5.1	9	2-18 even
5.2	6	3-18 every 3rd
5.4	13	1-3, 4-14 even, 16-19
Assess 1	18	2-36 even
Assess 2	12	2-18 even, 26,27,28
Assess 3	11	2-12 even, 22-30 even
Total	**179**	

NAME _____ DATE _____

Practice

For use with Lesson 1.1: Adding Rational Numbers

Find the absolute value.

1. $|9.37|$

2. $\left|-\frac{1}{7}\right|$

3. $|0|$

4. $\left|3\frac{4}{9}\right|$

5. $|-0.6\overline{1}|$

6. $\left|-\frac{13}{5}\right|$

Find the sum.

7. $4.27 + 0.13$

8. $(-4.27) + 0.13$

9. $4.27 + (-0.13)$

10. $\left(-\frac{1}{2}\right) + \left(-\frac{1}{2}\right)$

11. $\frac{1}{2} + \left(-\frac{1}{2}\right)$

12. $\left(-\frac{3}{8}\right) + \frac{1}{8}$

13. $\frac{11}{3} + \left(-\frac{11}{3}\right)$

14. $\left(-\frac{11}{3}\right) + \left(-\frac{11}{3}\right)$

15. $(-1.\overline{34}) + 1.\overline{34}$

16. $29.1 + 37.001$

17. $(-135) + 1.043$

18. $(-54.98) + (-1289.1)$

19. $\left(-\frac{1}{5}\right) + \left(-\frac{3}{10}\right)$

20. $\left(-\frac{3}{8}\right) + \frac{3}{7}$

21. $\left(-\frac{3}{8}\right) + \frac{5}{11}$

22. $(-17) + \frac{1}{4}$

23. $11\frac{2}{9} + \frac{1}{9}$

24. $\left(-13\frac{5}{6}\right) + \left(-51\frac{1}{3}\right)$

25. $36\frac{41}{49} + 0$

26. $(-0.\overline{8}) + (-1)$

27. $1 + \left(-\frac{20}{3}\right)$

28. $(-8) + 4.63 + 8$

29. $\left(-\frac{45}{7}\right) + \frac{11}{7} + \left(-\frac{15}{7}\right)$

30. $51 + 1.\overline{5} + (-1.\overline{5})$

31. $95.4 + (-39.37) + 4.6$

32. $(-45.08) + (-54) + (-0.92)$

33. $\left(-4\frac{2}{3}\right) + \left(-\frac{1}{12}\right) + 10$

34. *Checkbook* Darrell is balancing his checkbook. He has deposits of $324.78 and $1004.61. He wrote three checks for $123.85, $62.00, and $46.79. What is his ending balance if his starting balance was zero?

35. *Molding* Jim needs to buy molding for a new door in his home. He needs $83\frac{3}{8}$ inches for each side and $41\frac{1}{2}$ inches for the top. How many inches of molding does he need to buy?

Topic 1

NAME _____ DATE _____

Practice

For use with Lesson 1.2: Subtracting Rational Numbers

Give the opposite of each number.

1. 11.09

2. $-\dfrac{1}{4}$

3. 0

Rewrite the subtraction expression as an addition expression.

4. $-\dfrac{21}{2} - \dfrac{1}{2}$

5. $8.49 - (-0.07)$

6. $6 - 11.976$

Find the difference.

7. $6.39 - 0.18$

8. $(-6.39) - 0.18$

9. $6.39 - (-0.18)$

10. $\left(-\dfrac{5}{8}\right) - \left(-\dfrac{1}{8}\right)$

11. $\dfrac{5}{8} - \left(-\dfrac{1}{8}\right)$

12. $\left(-\dfrac{5}{8}\right) - \dfrac{1}{8}$

13. $\dfrac{11}{3} - \left(-\dfrac{11}{3}\right)$

14. $\left(-\dfrac{11}{3}\right) - \left(-\dfrac{11}{3}\right)$

15. $(-9.\overline{4}) - (-9.\overline{4})$

16. $138.97 - 2707.1$

17. $(-35) - 16.43$

18. $(-5.38) - (-219.53)$

19. $\left(-\dfrac{2}{7}\right) - \left(-\dfrac{3}{14}\right)$

20. $\left(-\dfrac{5}{8}\right) - \dfrac{2}{9}$

21. $\dfrac{5}{21} - \dfrac{2}{15}$

22. $(-167) - \dfrac{1}{4}$

23. $11\dfrac{2}{9} - \dfrac{1}{9}$

24. $\left(-153\dfrac{4}{7}\right) - \left(-1\dfrac{1}{3}\right)$

25. $36\dfrac{141}{249} - 0$

26. $0.\overline{8} - (-1)$

27. $1 - \dfrac{35}{3}$

Evaluate the expression.

28. $(-18) - 14.3 + 18$

29. $\left(-\dfrac{45}{4}\right) + \dfrac{11}{4} - \left(-\dfrac{15}{4}\right)$

30. $-72 - 1.\overline{5} - (-1.\overline{5})$

31. *Expenses*   Tammy is an art student at a local community college. She earned $635.28 in December and received a student loan of $1300. She has to pay $435.00 in tuition for school. How much money does she have left for art supplies and other living expenses?

32. *Fabric*   Mary bought 13 yards of fabric. She is cutting off two pieces to make flags. She cuts one piece $5\dfrac{1}{4}$ yards and the other piece $2\dfrac{5}{8}$ yards. How much fabric is left?

NAME _____ DATE _____

Practice

For use with Lesson 1.3: Multiplying and Dividing Rational Numbers

Find the reciprocal of the number.

1. -81

2. $\dfrac{6}{7}$

3. $5\dfrac{3}{10}$

Rewrite the division expression as a multiplication expression.

4. $\dfrac{7}{11} \div (-4)$

5. $\left(-\dfrac{1}{9}\right) \div \left(-\dfrac{1}{8}\right)$

6. $34\dfrac{1}{2} \div 1\dfrac{1}{2}$

Find the product or quotient.

7. $(15.9)(-0.0001)$

8. $(-1.896) \div (-10)$

9. $0.1 \div (-0.1)$

10. $\left(-\dfrac{2}{3}\right)\left(-\dfrac{1}{3}\right)$

11. $\left(-\dfrac{2}{3}\right) \div \left(-\dfrac{1}{3}\right)$

12. $\left(-\dfrac{2}{3}\right)(-3)$

13. $\left(\dfrac{5}{4}\right)\left(-\dfrac{3}{10}\right)$

14. $\left(-\dfrac{7}{5}\right)\left(-\dfrac{7}{5}\right)$

15. $\left(-\dfrac{7}{5}\right) \div \left(-\dfrac{7}{5}\right)$

16. $(64.12)(5.5)$

17. $(-125.5) \div 0.5$

18. $(-39.03) \div (-0.3)$

19. $\left(-1\dfrac{3}{4}\right) \div \left(-2\dfrac{1}{4}\right)$

20. $\left(-\dfrac{5}{6}\right)\left(6\dfrac{2}{18}\right)$

21. $\left(56\dfrac{3}{13}\right)(0)$

22. $(-16)\left(\dfrac{1}{4}\right)$

23. $(-16) \div \dfrac{1}{4}$

24. $(-16) \div (-4)$

25. $(-98)(272.63)$

26. $(7777)\left(-1\dfrac{1}{7}\right)$

27. $4848 \div 48.48$

Evaluate the expression.

28. $\left(-\dfrac{4}{9}\right)(-1) \div \dfrac{4}{9}$

29. $\left(-\dfrac{42}{9}\right)\left(\dfrac{12}{7}\right)\left(-\dfrac{15}{6}\right)$

30. $9 \div \dfrac{2}{9} \cdot \left(-\dfrac{2}{9}\right)$

31. *Pencils*   Eugena is buying 4 packs of pencils that cost $1.25 each. If the sales tax is $0.06 per dollar, how much is the sales tax on the 4 packs of pencils?

32. *Pizza*   Ray has 4 pizzas and plans to give $\frac{1}{5}$ of a pizza to each of his friends. How many slices can he give away?

NAME _____ DATE _____

Practice

For use with Lesson 1.4: Order of Operations

Evaluate the expression.

1. $-8.1 + 4(-5)$

2. $(-8.1 + 4)(-5)$

3. $6 \cdot \left(\dfrac{1}{2}\right) \div 8 \cdot (8)$

4. $6\left(\dfrac{1}{2}\right) + 8(8)$

5. $6\left[\dfrac{1}{2} \div 8 \cdot (8)\right]$

6. $\left(6 \cdot \dfrac{1}{2}\right) \div (8 \cdot 8)$

7. $(0.4)^3 - (0.5)(30)$

8. $[(0.4)^3 - (0.5)]30$

9. $(0.5)(30) - (0.4)^3$

10. $\left(-\dfrac{2}{7}\right)^2\left(-\dfrac{7}{10}\right) + 1$

11. $\left(-\dfrac{2}{7}\right)^2\left(-\dfrac{7}{10} + 1\right)$

12. $\left(-\dfrac{2}{7} - \dfrac{7}{10}\right)^2 + 1$

13. $\dfrac{10}{3} \div \left(-\dfrac{3}{10}\right) \cdot 9$

14. $\dfrac{10}{3} \div \left(-\dfrac{3}{10} \cdot 9\right)$

15. $\left(\dfrac{10}{3}\right) \div \left|-\dfrac{3}{10} \cdot 9\right|$

16. $1.2 + (0.1)^4 - 3$

17. $7 - 3\left(\dfrac{1}{4}\right)^2$

18. $(7 - 3)\left(\dfrac{1}{4}\right)^2$

19. $19 - (3.2 - 0.2)$

20. $19 - 3.2 - 0.2$

21. $(19 - 3.2) - 0.2$

22. $54.2 \div 0.2 \cdot (-6)$

23. $\dfrac{23}{11} - \dfrac{1}{11} + 67$

24. $(-24) \div 0.2 \cdot 0.4 - 21 + (7.4)(0.01)$

25. $\left(3\dfrac{1}{2} + 16\dfrac{1}{2}\right) \div \left(\dfrac{1}{3} - 2\dfrac{1}{3}\right)$

26. $-\dfrac{3}{4}(5 - 6)^2$

27. $81.95 - [1 - (1.2)^2 \div 2]$

28. $|-3593.2 - 1200.5|$

29. $-100\left|7 \div \left(-\dfrac{21}{5}\right) + 1^6\right|$

30. $\dfrac{-65 \div 13 + 91 \cdot (-3)^2}{2^3 - 12 \div 3}$

31. *Restaurant Bill*   Most restaurants add a 15% gratuity charge to the bills of diners who are in groups of six or more. You and eight friends have dinner in such a restaurant. Your bill is $8.95 before taxes or gratuity. The tax is 6%. What is your total bill? (Note: the gratuity is determined using the bill with tax added.)

NAME _____ DATE _____

Practice

For use with Lesson 2.1: Evaluating Expressions

Evaluate the expression when $x = -6$ and $y = \frac{2}{3}$.

1. xy **2.** $3y$ **3.** $-6y - x$

4. $\frac{1}{6}x$ **5.** $\frac{y}{2}$ **6.** $-|x|$

7. $x^2 + y^2$ **8.** $-3xy$ **9.** $17 + 2(x - 1)$

10. $y + 3$ **11.** $(x + 1)^2$ **12.** $|x - 3| + 12y$

13. $-x^2 + 100$ **14.** $|x| + |y|$ **15.** $-21y \div 3$

Evaluate the expression when $a = 0.07$, $b = -1$, and $c = 100$.

16. $a + b + c$ **17.** $ab - ac$ **18.** $a(b - c)$

19. $|-a|$ **20.** $c - b - a$ **21.** $c - (b - a)$

22. $b + \frac{a}{c}$ **23.** $\frac{b + a}{c}$ **24.** b^{20}

25. $15 - c|a + b|$ **26.** $a^2 + b^2 + c^2$ **27.** $4a + 3b$

28. $7(a + b)$ **29.** $\frac{ac}{b^3}$ **30.** $ac - b + a$

31. Find the perimeter of a rectangle with $l = 7.4$ meters and $w = 3.8$ meters.

32. Find the area of a circle with a diameter of 3 inches.

33. Find the perimeter of a square with side equal to $3\frac{2}{5}$ centimeters.

34. Use the formula for distance, $d = rt$, to find the distance d traveled when a car travels at the constant rate r of 75 kilometers per hour for one half of an hour. (t is time in hours.)

35. Use the formula $S = 6s^2$ to find the surface area S of a cube with side lengths of 4 feet.

Geometry
Basic Skills Workbook: Diagnosis and Remediation

NAME _____ DATE _____

Practice

For use with Lesson 2.2: Simplifying Linear Expressions in One Variable

Decide if each of the following is a linear expression.

1. $x^2 + 5$

**2.** $-7y - 3$

3. $11a$

4. $18 + 46b$

5. $|x| + 9$

6. $4xy$

Simplify by combining like terms.

7. $14x + x$

8. $-y - y$

9. $5a + 6a + 17$

10. $-3c - 3 + 10c - 7$

11. $15 + d + 6d$

12. $87h - 21h$

13. $13b + 9 - 2b - 9$

14. $(3y + 1)(-2) + y$

15. $2(x + 1) - 3(x - 4)$

16. $(5.1x + 0.06) + (x - 1)$

17. $4(2 - a) - a$

18. $2359 + 145 + 21x$

19. $\dfrac{5}{6}k + \dfrac{1}{6}k$

20. $3n - 7 + \dfrac{1}{2}n + 8$

21. $60 - \dfrac{6}{7}y + \dfrac{8}{7}y$

22. $12x + (7 - x)2$

23. $-91.26z + 2(2.51z + 3.22)$

24. $12(2n - 3) + 4(n - 13)$

25. $\dfrac{5}{14}y + y + \dfrac{1}{7}y$

26. $-\dfrac{19}{8}v - \dfrac{5}{24}v - \dfrac{8}{3}v$

27. $6\dfrac{1}{4} + 5c - \dfrac{3}{8}$

28. $(7 - 6.43x) - 7x$

29. $8d - 900 - d + 45.7$

30. $-16t + 21 + (-0.08t)$

31. The length of the rectangle below is twice the width. Find a simplified algebraic expression for the perimeter of the rectangle.

x

$2x$
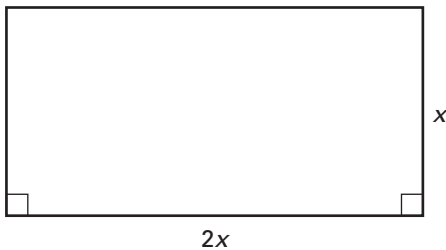
32. Find a simplified algebraic expression for the perimeter of the quadrilateral below.

$a + 3$

$3a - 5$

a

$7a$

Geometry
Basic Skills Workbook: Diagnosis and Remediation

NAME _____ DATE _____
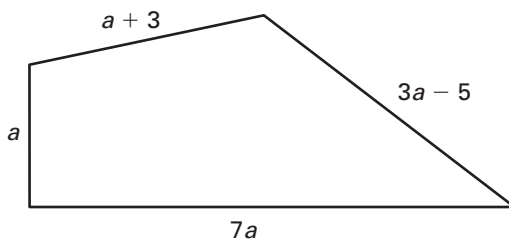
Practice

For use with Lesson 2.3: Simplifying Expressions in Two Variables

Identify the like terms in each expression.

1. $6x^2 + 5x + x$

2. $-7xy - 3y + xy + 5x$

3. $11a^3 - a^2 + 20a^3 - 9a^2$

4. $8 + 4b + 3b$

5. $cd^5 + 2cd - c^2d$

6. $(14x^2 + 3xy - y^2) + (xy + 7)$

Simplify by combining like terms.

7. $72x + y + x$

8. $-4y - xy + xy$

9. $15a^2 + 6a + 17a^2$

10. $-3c - 13d + 10c - 7d$

11. $105 + cd + 6d$

12. $7m - 2m + 8n + 5n$

13. $33b^3 + 9b^2 - 2b - 9b^2$

14. $c^2 + c^2 + c^2$

15. $2x - 5y - 5x + y$

16. $x^2y + 6xy + 3xy - 1$

17. $(-9m - 0.67n) + (m + 4n)$

18. $59x^3 + 45x^2 + 21x$

19. $\frac{7}{3}k + \frac{1}{6}l - k$

20. $172x - y + \frac{5}{9}y$

21. $m^2 - 7mn + 8m^2 + 3mn - 4n^2$

22. $0.8r^2 - 7.7r^2$

23. $-5391.26z + 17.53z + 0.165$

24. $54.17x^2 + 3x - 2.76x - 2x^2$

25. $\frac{35}{4} + xy + \frac{1}{16}xy$

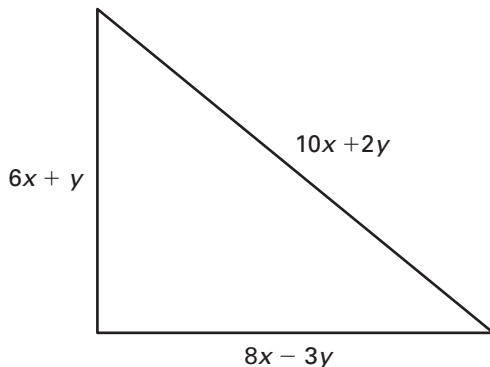**26.** $-\frac{11}{8}u^3v - \frac{5}{4}uv^3 - \frac{9}{8}u^3v$

27. $65\frac{1}{7} + c - \frac{8}{7} + d$

28. $(6g - h) - (-h + 6g)$

29. $B + 2A + 2A + B + A$

30. $-2t^2 + 2.11t + (-0.07t)$

31. Find a simplified algebraic expression for the perimeter of the triangle below.

$10x + 2y$

$6x + y$

$8x - 3y$

NAME _____ DATE _____

Practice

For use with Lesson 3.2: Solving Inequalities

Check to see if the number given is a solution of the inequality.

1. $-x > 15, -19$

2. $6y + 4 \geq 0, -0.1$

3. $4c \leq 3c, \dfrac{1}{2}$

4. $9 - (x + 3) < 1, 0$

Solve the inequality.

5. $\dfrac{x}{3} \leq -1$

6. $d + 3 > -1$

7. $d - 3 < -1$

8. $3d > -1$

9. $-x - 1 \geq 1$

10. $-11 > 13y + 6$

11. $\dfrac{k}{-7} + \dfrac{5}{6} \geq \dfrac{-1}{6}$

12. $5.05b + 0.95b > 12$

13. $63x < x$

14. $\dfrac{1}{6}h - 8 \geq \dfrac{1}{6}$

15. $-(x - 4) + x < 3x + 3$

16. $n + 0.27 > 9n + 0.03$

17. $31 + 2(t + 2) < -5$

18. $-8x \geq 3$

19. $\dfrac{6x}{-14} + 7 > 10$

20. $-77k + |-9 - 6| < 0$

21. $2(-5)^2 + y > 100$

22. $0.1(100x + 1000) > 1000$

23. $8.25a - 8a + 13.12 > -0.13$

24. $\dfrac{1}{2}(m - 6) + \dfrac{3}{2}(m - 16) \leq m - 9$

25. *Perimeter*   The perimeter of the figure below is at least 10 meters.
Find the possible values of x.

NAME _____ DATE _____
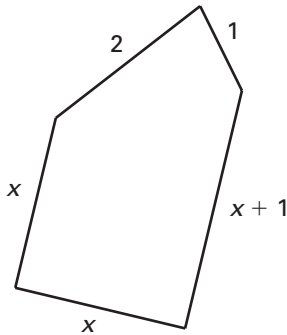
Practice

For use with Lesson 3.3: Proportions

1. Write the extremes and the means of the proportion $\frac{2}{6} = \frac{1}{3}$.

Write yes or no to tell whether the equation is equivalent to $\dfrac{a}{b} = \dfrac{c}{d}$.

2. $ad = bc$

3. $ab = cd$

4. $\dfrac{b}{a} = \dfrac{d}{c}$

Solve the proportion.

5. $\dfrac{x}{8} = \dfrac{1}{2}$

6. $\dfrac{8}{x} = \dfrac{1}{2}$

7. $\dfrac{8}{11} = \dfrac{x}{2}$

8. $\dfrac{8}{11} = \dfrac{1}{x}$

9. $\dfrac{y}{-5} = \dfrac{10}{-2}$

10. $\dfrac{k}{-45} = \dfrac{7}{-5}$

11. $\dfrac{6}{b} = \dfrac{15}{3}$

12. $\dfrac{9}{100} = \dfrac{7.2}{x}$

13. $\dfrac{3}{75} = \dfrac{p}{100}$

14. $\dfrac{y}{-18} = \dfrac{-11}{-6}$

15. $\dfrac{36}{k} = \dfrac{6}{-7}$

16. $\dfrac{125}{100} = \dfrac{x}{4}$

17. $\dfrac{x}{-3} = \dfrac{x+1}{-2}$

18. $\dfrac{h}{87} = \dfrac{h-1}{7}$

19. $\dfrac{8y}{-5} = \dfrac{10y+3}{1}$

20. $\dfrac{70}{s+68} = \dfrac{1}{s-1}$

21. $\dfrac{r+7}{r} = \dfrac{5}{12}$

22. $\dfrac{3}{2} = \dfrac{w+3}{7w+2}$

23. *Scale drawing*   In a scale drawing one inch represents one and one-half meters. How many meters does 8 inches represent?

24. *Recipe*   Mary is baking bread. The recipe says that 12 cups of flour will make 3 loaves of bread. How many cups are needed for 2 loaves of bread?

25. *Medicine dosage*   If the correct medicine dosage for a 140-pound woman is 0.625 milligrams, what is the correct dosage for a 155-pound woman?

Topic 3

NAME _____ DATE _____

Practice

For use with Lesson 3.4: Solving Problems

Use the problem solving plan and models to solve.

1. ***T-shirts*** Your baseball team buys 10 T-shirts that are all the same price. Your bill is $159.00, including 6% tax. What is the price of one T-shirt before tax is added?

2. ***Stuffed animals*** Alice has collected two stuffed animals each week for 20 weeks. How many more weeks must she continue to collect at this rate to have more than 100 stuffed animals?

3. ***Paint*** One gallon of paint will cover up to 400 square feet of previously painted surfaces. You buy paint to repaint 6 rectangular walls that are each 15 feet long and 10 feet high. How many gallons of paint do you need to buy? (*Hint*: you cannot buy part of a gallon.)

4. ***Fabric*** Mrs. Hayes is cutting fabric to make kites. Each kite takes $\frac{1}{2}$ yard of fabric. She cuts 30 yards into $\frac{1}{2}$ yard lengths. How many kites can she make?

5. ***Flowers*** You can plant 42 flowers in 1 square foot of garden space. How many flowers should you buy for a circular space with radius 8 inches?

6. ***Basketball*** You scored 24 points in your last basketball game. You made 5 free throws at 1 point each and one 3-point field goal. The rest of your points were from 2-point field goals. How many 2-point field goals did you make?

7. ***Tiles*** Jim is installing ceramic tile behind his kitchen sink. Each tile is a square with side length $4\frac{1}{4}$ inches. For each tile, he allows an additional $\frac{1}{8}$ inch per side for the grout between tiles. How many tiles should he buy if the space measures 2.1 square feet?

8. ***Final grade*** Your final math grade is 80% of the semester average and 20% of your final exam grade. Your grades during the semester are 72, 78, 78, and 86. You need a C (77 to 84) or better to play sports in the fall. What is the lowest score you can receive on your exam to be able to play sports?

9. ***Fish*** When placing fish into an aquarium, there should be no more than one inch of fish length per one gallon of water. Carl has 12 inches of fish length in a 30-gallon tank. When he goes to buy more fish, at most, how many 2.5-inch fish can he buy?

10. ***Dance*** Your class has hired a disc jockey for a Friday night dance. The disc jockey costs $250. Three hundred people have signed up to attend the dance. How much should you charge for tickets in order to make a profit of more than $500?

NAME _____ DATE _____

Practice

For use with Lesson 4.3: Circles

Find the diameter of a circle with the given radius.

1. 10 mm

2. 17 in.

3. 2 ft

4. $\frac{6}{7}$ m

5. 5.3 cm

6. $9\frac{1}{16}$ in.

Find the radius of a circle with the given diameter.

7. 18 ft

8. 6 in.

9. 11 miles

10. $\frac{3}{4}$ in.

11. 0.1 m

12. $44\frac{3}{8}$ in.

Use a compass to draw a circle with the given radius or diameter.

13. radius = 4 cm

14. radius = 1 in.

15. radius = $\frac{5}{8}$ in.

16. radius = $2\frac{1}{2}$ in.

17. diameter = 35 mm

18. diameter = 8.9 cm

19. diameter = $3\frac{3}{4}$ in.

20. radius = 7.5 cm

Use a compass to draw a circle and label it to match the description. Use the scale of 1 inch = 1 foot in your sketch.
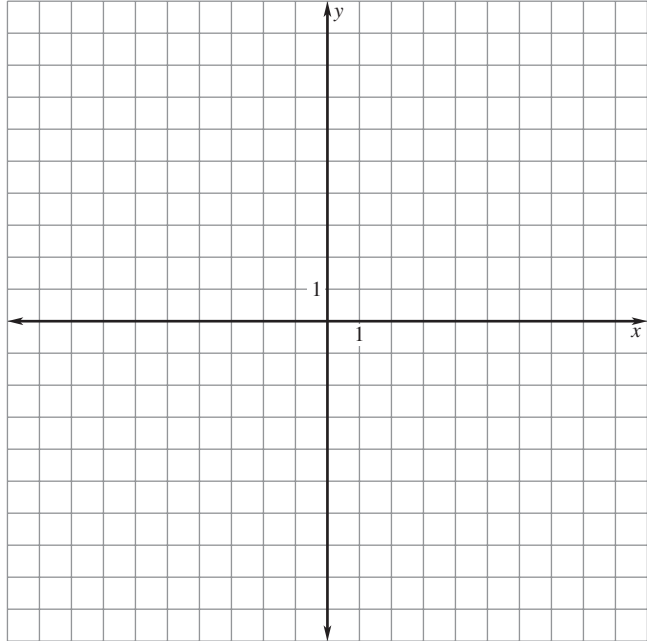
21. Delores is planting a circular garden with diameter 5 feet.

22. The portholes of Bill's boat have a radius of $\frac{3}{4}$ foot.

NAME _____ DATE _____

Practice

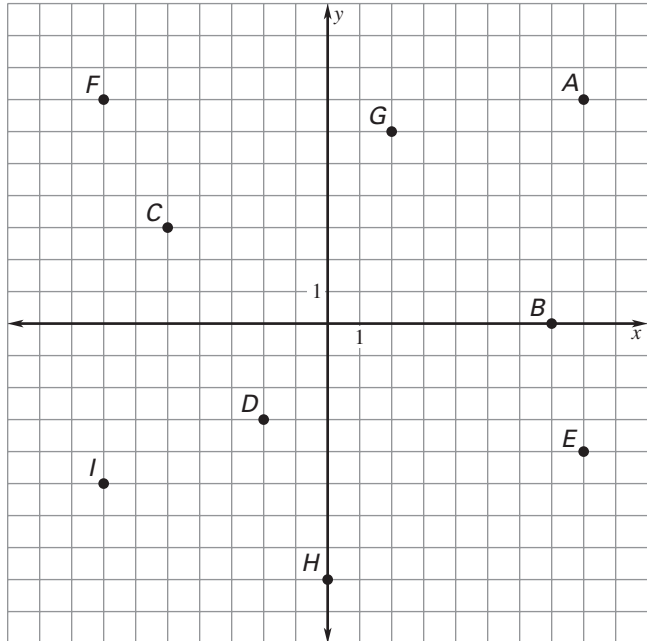**For use with Lesson 5.1: Plotting Points**

Plot and label each of the following points on the coordinate plane.

1. $A(6, -7)$

2. $B(-4, 3)$

3. $C(-5, -1)$

4. $D(0, -1)$

5. $E(2, 9)$

6. $F(-5, 0)$

7. $G(0, 0)$

8. $H(-8, -10)$

9. $I(9, 6)$

10. $J(2, -2)$

Give the coordinates of each point on the graph and the quadrant in which it lies.

11. A

12. B

13. C

14. D

15. E

16. F

17. G

18. H

19. I

Geometry
Basic Skills Workbook: Diagnosis and Remediation

NAME _____ DATE _____

Practice

For use with Lesson 5.2: Graphing Equations

Decide whether the given ordered pair is a solution of the equation.

1. $6y - 3x = -9, (2, -1)$

2. $-2x - 9y = 7, (-1, -1)$

3. $-3x + y = 12, (0, 4)$

4. $x + 4y = 48, (8, 10)$

Find three ordered pairs that are solutions of the equation.

5. $y = -2x + 12$

6. $y + 4x = -7$

Fill in the missing values in the table.

7.

x	-2	-1	0	1	2
$y = 6x + 2$	$y = 6(-2) + 2$	$y = 6(\underline{\ \ \ }) + 2$	$y = \underline{\ \ \ \ \ }$	$y = \underline{\ \ \ \ \ }$	$y = \underline{\ \ \ \ \ }$
y	-10	-4	_____	_____	_____

8.

x	-14	-7	_____	_____	14
$y = \dfrac{2}{7}x - 4$	$y = \underline{\ \ \ \ }$	$y = \dfrac{2}{7}(\underline{\ \ \ }) - 4$	$y = \underline{\ \ \ \ }$	$y = \dfrac{2}{7}(7) - 4$	$y = \underline{\ \ \ \ }$
y	-8	_____	-4	_____	_____

Graph the linear equation.

9. $y = x + 3$

10. $y = -3x + 2$

11. $6y = 3x + 6$

12. $x = y - 1$

13. $-2x - 2y - 2 = 2$

14. $7x + 2y = 4$

15. $x + y = 10$

16. $x - y = 0$

17. $4y = 3x + 6$

18. $9x + 9y = 18$

19. $y = 5$ *(Hint: $y = 0x + 5$; x may take on any value.)*

NAME _____ DATE _____

Practice

For use before Lesson 5.4: Perimeter and Area

Use the figure at the right to complete the statement.

1. The perimeter of Figure A is _____.

2. The area of Figure A is _____.

3. The area of Figure A is _____ than the area of Figure B.
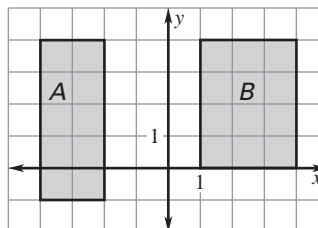
### The points are the vertices of a figure in the coordinate plane. Plot the points and find the perimeter of the figure.

4. $A(0, 3), B(0, -1), C(-3, -1), D(-3, 3)$ 5. $A(-6, 6), B(2, 6), C(2, 2), D(-6, 2)$

6. $J(8, 8), K(8, -8), L(-4, -8), M(-4, 8)$ 7. $J(-6, 6), K(3, 6), L(3, -3), M(-6, -3)$

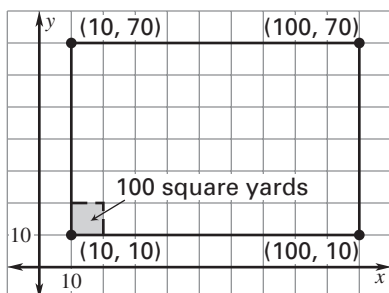8. $W(1, -1), X(3, -1), Y(3, -2), Z(1, -2)$ 9. $W(-6, -8), X(-6, 0), Y(2, 0), Z(2, -8)$

The points are the vertices of a figure in the coordinate plane. Plot the points and find the area of the figure.

10. $A(-2, 2), B(3, 2), C(3, -1), D(-2, -1)$ 11. $A(-2, -3), B(-2, 2), C(1, 2), D(1, -3)$

12. $J(-1, 0), K(1, 0), L(1, -2), M(-1, -2)$ 13. $J(-2,1), K(1, 1), L(1, -3), M(-2, -3)$

14. $W(2, -2), X(-2, -2), Y(-2, 2), Z(2, 2)$ 15. $W(3, 3), X(3, -1), Y(-3, -1), Z(-3, 3)$

Divide and/or rearrange the shaded figure to find its area.

16.

17.

18.
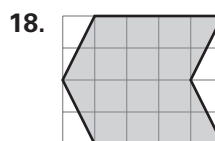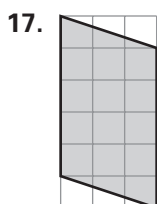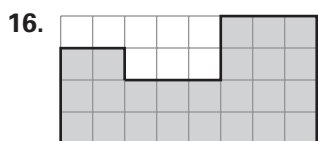
19. A rectangular plot of land is mapped as shown. Each square on the grid represents 100 square yards. An acre of land has an area of 4840 square yards. Is the plot of land more or less than 1 acre? Explain.

Assessment

For use with Topic 1: Operations with Rational Numbers

Topic 1

Find the absolute value.

1. $\left|-8.5\right|$ **2.** $\left|\dfrac{1}{3}\right|$ **3.** $\left|-4\dfrac{3}{8}\right|$

Give the opposite of each number.

4. 1 **5.** -75 **6.** 25

Find the sum or difference.

7. $\dfrac{5}{6}+\dfrac{1}{6}$ **8.** $\left(-\dfrac{2}{5}\right)+\left(-\dfrac{2}{3}\right)$ **9.** $0.56-8.87$

10. $10.25+(-14.33)$ **11.** $1+\left(-\dfrac{13}{15}\right)$ **12.** $(-2.56)-(-2.56)$

13. $\dfrac{9}{10}-\dfrac{3}{5}$ **14.** $\left(-\dfrac{8}{3}\right)-\left(-\dfrac{4}{7}\right)$ **15.** $-3.65+(-19.01)$

Find the reciprocal of the number.

16. -23 **17.** $\dfrac{6}{7}$ **18.** 0.25

Find the product or quotient.

19. $\dfrac{4}{9}\div\dfrac{8}{3}$ **20.** $(-2.3)(8.4)$ **21.** $\dfrac{3}{11}\cdot\left(-\dfrac{5}{18}\right)$

22. $(-65.5)\div(-0.5)$ **23.** $\left(-3\dfrac{2}{3}\right)\div\left(-1\dfrac{3}{6}\right)$ **24.** $14.25\div3.8$

25. $\left(-\dfrac{16}{5}\right)\cdot\left(\dfrac{25}{28}\right)$ **26.** $(10.8)(-6.57)$ **27.** $\left(-\dfrac{9}{8}\right)\div\left(-3\dfrac{3}{4}\right)$

Evaluate the expression.

28. $\dfrac{4}{5}\div\left(-\dfrac{1}{5}\right)+13$ **29.** $\left|\dfrac{9}{10}\cdot\dfrac{1}{2}\right|-\dfrac{3}{10}$ **30.** $3(2.7\div0.9)-5$

31. $\dfrac{1}{2}\cdot26-3^2$ **32.** $2.5\cdot(-0.5)^2\div5$ **33.** $\dfrac{1}{3}(9\cdot3)+18$

34. $\dfrac{9\cdot2}{4+3^2-1}$ **35.** $\dfrac{13-(-4)}{18-4^2+1}$ **36.** $\dfrac{5^3\cdot2}{1+6^2-8}$

NAME _____ DATE _____

Assessment

For use with Topic 1: Operations with Rational Numbers

Topic 1

Find the absolute value.

1. $\left|-8.5\right|$

2. $\left|\dfrac{1}{3}\right|$

3. $\left|-4\dfrac{3}{8}\right|$

Give the opposite of each number.

4. 1

5. -75

6. 25

Find the sum or difference.

7. $\dfrac{5}{6} + \dfrac{1}{6}$

8. $\left(-\dfrac{2}{5}\right) + \left(-\dfrac{2}{3}\right)$

9. $0.56 - 8.87$

10. $10.25 + (-14.33)$

11. $1 + \left(-\dfrac{13}{15}\right)$

12. $(-2.56) - (-2.56)$

13. $\dfrac{9}{10} - \dfrac{3}{5}$

14. $\left(-\dfrac{8}{3}\right) - \left(-\dfrac{4}{7}\right)$

15. $-3.65 + (-19.01)$

Find the reciprocal of the number.

16. -23

17. $\dfrac{6}{7}$

18. 0.25

Find the product or quotient.

19. $\dfrac{4}{9} \div \dfrac{8}{3}$

20. $(-2.3)(8.4)$

21. $\dfrac{3}{11} \cdot \left(-\dfrac{5}{18}\right)$

22. $(-65.5) \div (-0.5)$

23. $\left(-3\dfrac{2}{3}\right) \div \left(-1\dfrac{3}{6}\right)$

24. $14.25 \div 3.8$

25. $\left(-\dfrac{16}{5}\right) \cdot \left(\dfrac{25}{28}\right)$

26. $(10.8)(-6.57)$

27. $\left(-\dfrac{9}{8}\right) \div \left(-3\dfrac{3}{4}\right)$

Evaluate the expression.

28. $\dfrac{4}{5} \div \left(-\dfrac{1}{5}\right) + 13$

29. $\left|\dfrac{9}{10} \cdot \dfrac{1}{2}\right| - \dfrac{3}{10}$

30. $3(2.7 \div 0.9) - 5$

31. $\dfrac{1}{2} \cdot 26 - 3^2$

32. $2.5 \cdot (-0.5)^2 \div 5$

33. $\dfrac{1}{3}(9 \cdot 3) + 18$

34. $\dfrac{9 \cdot 2}{4 + 3^2 - 1}$

35. $\dfrac{13 - (-4)}{18 - 4^2 + 1}$

36. $\dfrac{5^3 \cdot 2}{1 + 6^2 - 8}$

Geometry
Basic Skills Workbook: Diagnosis and Remediation

NAME _____ DATE _____

Assessment

For use with Topic 2: Algebraic Expressions

Evaluate the expression when $x = -\frac{3}{4}$ and $y = 8$.

1. $12x$

2. $-|2x| + y$

3. $16(x - 3)$

4. $y^2 - 32x^2$

5. $-3y \div x$

6. $\frac{2}{3}x + \frac{1}{4}y$

Simplify by combining like terms.

7. $-20x + 3x$

8. $4b - 13b + 10$

9. $-6.2a - 7 + 8.1a$

10. $\frac{2}{5}y - y + \frac{3}{5}y$

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

12. $7(-3y + 2) - 10$

13. $y + 4x - 3y$

14. $-3xy - 5y + 7xy$

15. $2x^2y^2 + 4x^2y + 8x^2y^2$

16. $23x - 2y + \frac{5}{8}y$

17. $1.5a^2 - 3.8a^2$

18. $-8m^2 + 3mn - n^2 - 5mn$

Identify the mathematical property illustrated in each identity.

19. $5 - 8x + 2 = 5 + 2 - 8x$

20. $-7x + 2(x - 5) = -7x + 2x - 10$

21. $(x + 2) + 9 = x + (2 + 9)$

22. $(x^2 - xy^2)(1) = x^2 - xy^2$

State the mathematical property used in each step of the simplification.

23. $12x + 3(7 - 4x) = 12x + 21 - 12x$ **a.** _____

$= 12x - 12x + 21$ **b.** _____

$= 21$ **c.** _____

Show the steps and state the mathematical properties used in simplifying the expression.

24. $[2x - (y + 2x)][(-3 + x) - x + 4]$ **25.** $-16(x - 2) + 8(2x - 4)$

26. Find the perimeter of a rectangle with length 22.4 meters and width 10.6 meters.

27. Use the formula for distance, $d = rt$, where r is the rate and t is time to find the rate of a car which travels 100 miles in 1.5 hours.

28. Find a simplified algebraic expression for the perimeter of the figure below.

$4a + 3$

$2a$

$0.5a$

$a - 3$

$2a + 1.5$

$-2a + 10$

Topic 2

NAME _____ DATE _____
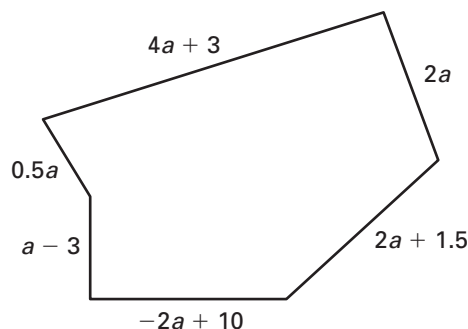
Assessment

For use with Topic 3: Equations and Inequalities

Solve the equation.

1. $21x - 12 = 30$

2. $-3 = 5 - 2d$

3. $\dfrac{m}{8} = -11$

4. $-13 = 52y$

5. $\dfrac{5}{4}x - 3 = 2$

6. $0.21p = 2.42 - p$

7. $2z + 0.98 = z - 0.52$

8. $3(6t - 2) - 8 = 5 - t$

9. $12 - 3x = -51$

Check to see whether the number given is a solution of the inequality.

10. $5s - 7 \leq 12,\ 4$

11. $-3b \geq 25,\ -9$

12. $12 - (4 - x) > 0,\ -8$

Solve the inequality.

13. $n - 6 < -2$

14. $2.5k + 3 \geq 4.5$

15. $\dfrac{c}{4} + \dfrac{1}{9} > -\dfrac{8}{9}$

16. $-20 \geq 11y + 13$

17. $17 - 5d \leq 2$

18. $\dfrac{4h}{-5} - 4 \geq 16$

19. $16 - 2(r - 5) < -6$

20. $4(-2)^2 + b > 36$

21. $-6.25c + 4c - 4.5 < 0$

Solve the proportion.

22. $\dfrac{x}{10} = \dfrac{3}{2}$

23. $\dfrac{15}{y} = \dfrac{3}{4}$

24. $\dfrac{16}{p} = \dfrac{64}{4}$

25. $\dfrac{c}{-72} = \dfrac{2}{-3}$

26. $\dfrac{4}{-50} = \dfrac{z}{-125}$

27. $\dfrac{54}{t} = \dfrac{3.75}{2.5}$

28. $\dfrac{-1.8}{m} = \dfrac{-1.5}{6}$

29. $\dfrac{3 + x}{x} = \dfrac{9}{8}$

30. $\dfrac{5}{2} = \dfrac{t + 2}{t - 1}$

Use the problem-solving plan to solve.

31. *Word Game* In a word game, you spell a word using 7 letters for a score of 14 points. You use 3 vowels worth 1 point each and an N worth 2 points. The other 3 letters are M's. How many points is an M worth?

32. *Candles* You are making candles to sell at the school craft fair. It costs $2.25 to make each candle, and you sell the candles for $7.75. You want to make a profit of $99. How many candles must you sell?

33. *Jeans* You buy 2 pairs of jeans at the same time. The total amount you pay is $54.06, including 6% sales tax. What is the price of one pair of jeans before sales tax is added?

Geometry
Basic Skills Workbook: Diagnosis and Remediation

Topic 3