Summer Math Packet

For Students Entering 8th Grade

The following packet is designed to review some of the major concepts covered in seventh-grade math and to prepare you for the material you will encounter in eighth-grade math class. The material is divided into six weeks of work and is NOT intended to be completed in a couple of days. If you focus on each concept one week at a time, you will find the assignments very manageable. If you do not remember how to work any of the problems, please consult your math notes, Khan Academy or another web-based source.

NOTE: All packets are due on the first day of 8th grade—please bring with you to class! This packet will count as your first grade in the 1st quarter.

Week 1

Order of Operations & Operations with Integers — Pages 1-4

Week 2

Adding, Subtracting, Multiplying and Dividing Fractions — Pages 5-9

Week 3

Simplifying Algebraic Expressions and Solving Equations — Pages 10-14

Week 4

Ratios, Rates, Proportions and Similar Figures — Pages 15-19

Week 5

Percents and Percent of Change — Pages 20-22

Week 6

Geometry Review – Angle Relationships, Area & Volume, Graphing — Pages 23-27

Find the Bingo

DIRECTIONS:

Work any problem to the right, and find your answer in the bingo box below. Circle the answer.

Keep working problems in any order until you have five circled answers in a line—horizontally, vertically or diagonally.

WHEN YOU FIND THE BINGO, YOUR WORK IS FINISHED!

15	17	0	64	6
1	81	100	56	32
8	43	54	12	105
96	72	49	3	63
11	4	5	10	21

1. $(24 \div 3) + 4 =$
2. $(24 + 24) \div 6 =$
3. $(48 \div 8) \times (63 \div 7) =$
4. $(72 \div 9) \times 4 =$
5. $(45 \div 5) \div 3 =$
6. $(64 \div 8) \div (56 \div 7) =$
7. $36 \div (2 \times 3) =$
8. $(56 \div 8) \times (54 \div 6) =$
9. $(40 \div 4) \div (1 \times 2) =$
10. $(36 \div 4) \times 8 =$
11. $(36 \div 4) + (18 \div 9) =$
12. $(45 \div 5) - (72 \div 8) =$
13. $(9 \times 9) - (8 \times 8) =$
14. $(49 \div 7) + (7 \times 7) =$
15. $(14 + 2) \div 4 =$

Why Did Simeon Wrench Sleep Under His Car?

Simplify or evaluate each expression below, as directed. Find your answer at the bottom of the page and write the letter of that exercise below it.



SIMPLIFY:

(E) $8 + (9 \cdot 3)$

(I) $(8 + 9) \cdot 3$

(A) $14(10 \div 2)$

(Y) $(12 \cdot 3) - (9 \cdot 2)$

(T) $(4 \cdot 10) + (75 \div 25)$

(E) $\dfrac{80 - 3}{8 + 3}$

(P) $13 + [2(9 - 6)]$

SIMPLIFY:

(A) $\dfrac{12 + 8}{12 - 2} + \dfrac{8}{2}$

(O) $3[5(48 \div 12)]$

(T) $\dfrac{50 - [3(7 - 1)]}{2}$

(H) $[4(30 - 5)] \div \dfrac{10}{2}$

(E) $\dfrac{12(15 \div 3)}{(20 \cdot 5) - (20 \cdot 2)}$

(D) $5 + [4 \cdot 3(2 + 1)]$

(W) $\left[\dfrac{6 \cdot 2(8 - 3)}{11 + 4}\right] \cdot 6$

EVALUATE if

$a = 1$ $\quad m = 3$ $\quad x = 6$

$b = 2$ $\quad n = 10$ $\quad y = 0$

(K) $\dfrac{7m + 1}{b}$

(N) $(3n - 2m)(a + b)$

(L) $\dfrac{2(n + x)}{n - x}$

(U) $x[b(m + 1) - 3]$

(W) $\dfrac{mn - 5y}{a + b}$

(O) $(n - a)(n - b)(n - m)(n - n)$

20	7	24	6	72	16	35	41	43	60	10	70	11	1	30	19	0	51	8	18

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IT'S FUN, SUM-TIMES

Do each exercise below and find your answer in the code above that column of exercises. Each time the answer appears, write the letter of the exercise above it. Keep working and you will discover two "punny" answers!

When Was the 300-lb Wrestler on Television?

−64	−61	24	4	10	−1	2	14	66	−1	4	−6	−1

24	−1	4	−22	−60	0	−1	−7	−20	−5

(H) $-9 + 3$

(A) $-5 \cdot 12$

(O) $20 + (-6)$

(S) $-3\ (-8)$

(I) $-7 + (-13)$

(R) $-2\ (3)(-11)$

(D) $-9 + (-5) + 7$

(J) $(-4)^3$

(C) $(-2)(5) + (-3)(4)$

(B) $(3)(-2) + (-4)(-4)$

(N) $(-1)(-9) + (2)(-7)$

(T) $(4)(5) + (-8)(2)$

(U) $(8)(-5) + (-7)(3)$

(E) $(-2)(-4) + (-3)(3)$

(F) $(-6)(9) + (-8)(-7)$

(V) $(-2)(-12) + (3)(8)$

Why Does a Lawn Mower Live Such a Hard Life?

16	−2	−9	−4	400	−9	−24	−28	−8	−18	−2	−28

50	7	−28	21	−18	−26	−9	15	250	7	−54	−26

(U) $-4 + 12 + (-7)$

(Y) $(2)(-3)(4)$

(E) $-6 + (-6) + (-6)$

(I) $(-2)^4$

(D) $(-3)^3 + (-1)^2$

(L) $20 + (-7) + (-17)$

(O) $(-5)^3\ (-2)$

(H) $30 + (-12) + 3$

(T) $-8 + 3 + (-8) + 11$

(W) $(-4)(5)(-10)(2)$

(N) $(-3)(2)(-1)(-9)$

(G) $-3 + (-7) + (-7) + 9$

(R) $(-5)(-7) + (10)(-2)$

(S) $(4)(-6) + (2)(-2)$

(P) $(-5)(-5) + (-5)(-5)$

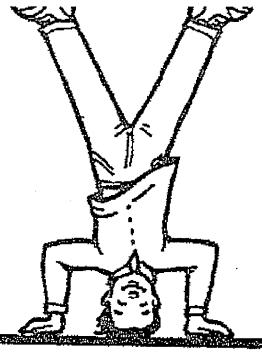
(A) $(2)(-8) + (-1)(-7)$

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When Might You Think You're Built Upside Down?



Do each exercise below and find your answer in one of the boxes at the bottom of the page. Write the letter of the exercise in that box. (To help you locate each answer quickly, the answers are arranged in order from smallest to largest.)

(S) $-5(-1+6)$

(U) $\frac{8(-3)}{-6}$

(E) $\frac{-380}{38}+\frac{380}{-38}$

(M) $(2)(-2)+(5)(6)$

(E) $\frac{-15}{15}+\frac{150}{15}$

(U) $(-1)(-7)^2$

(L) $(-3)(7)(-2)(5)$

(E) $(-2)^4$

(N) $(-3)^2(-2)^3$

(D) $\frac{-6+(-3)+(-7)}{4}$

(W) $-5\cdot 2\cdot 53$

(R) $-8+17+(-3)$

(R) $\frac{-72}{8}+\frac{-56}{7}$

(O) $(-3\cdot 7)+(-2\cdot 4)$

(A) $\frac{170}{-10}+\frac{96}{12}$

(L) $(-30)^2$

(N) $(-3)(-12)(-1)$

(F) $\frac{-60}{-3}+\frac{-48}{4}$

(S) $-1(-6)+8(-2)$

(E) $(-9)^2(-1)^5$

(H) $(-8)(-1)(4)(-3)$

(T) $\frac{9(-4)}{-2}$

(N) $\frac{-32}{2}+\frac{-75}{-15}$

(O) $-7+8+(-9)+10$

(E) $(-7)(5)(-4)$

(U) $\frac{-9\cdot 5}{3}$

(Y) $(-2)(-3)+(-1)(7)$

(Y) $(-4)^3$

(S) $\frac{(-4)(-25)}{5}$

(N) $\frac{-19+(-11)}{6}$

(R) $80+(-50)+(-70)$

(O) $-2(-5)(-6)$

	−530	−96	−81	−72	−64	−60	−49	−40	−36	−29	−25	−20	−17	−15	−11	−10
	−9	−5	−4	−1	2	4	6	8	9	16	18	20	26	140	210	900

(4)

Name : _____ Score : ____ _____

Teacher : _____ Date : _____

(5)

Multiplying Fractions

1) $\frac{3}{8} \times \frac{3}{4} =$

2) $\frac{6}{7} \times \frac{7}{9} =$

3) $\frac{9}{10} \times \frac{2}{4} =$

4) $\frac{3}{6} \times \frac{2}{3} =$

5) $\frac{6}{8} \times \frac{1}{3} =$

6) $\frac{8}{9} \times \frac{1}{2} =$

7) $\frac{5}{8} \times \frac{2}{3} =$

8) $\frac{3}{5} \times \frac{1}{2} =$

9) $\frac{1}{6} \times \frac{1}{3} =$

10) $\frac{1}{4} \times \frac{2}{5} =$

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Teacher : _____ Date : _____

(6)

Dividing Fractions

1) $\frac{8}{9} \div \frac{4}{7} =$

2) $\frac{3}{5} \div \frac{5}{6} =$

3) $\frac{1}{5} \div \frac{3}{8} =$

4) $\frac{2}{4} \div \frac{2}{6} =$

5) $\frac{1}{4} \div \frac{7}{9} =$

6) $\frac{2}{4} \div \frac{3}{9} =$

7) $\frac{1}{4} \div \frac{2}{8} =$

8) $\frac{2}{10} \div \frac{1}{2} =$

9) $\frac{2}{9} \div \frac{6}{7} =$

10) $\frac{5}{8} \div \frac{1}{3} =$

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Name _____ Class _____ Date _____

Reteaching 5-3 Adding and Subtracting Fractions

Evens Only

Subtract $3\frac{1}{3} - 1\frac{5}{6}$.

Find a common denominator.

$3\frac{1}{3} = \quad 3\frac{2}{6} =$

$-\ 1\frac{5}{6} = \quad -\ 1\frac{5}{6} =$

Rename $3\frac{2}{6}$ and subtract.

$2\frac{8}{6}$

$-\ 1\frac{5}{6}$

$1\frac{3}{6} = 1\frac{1}{2}$ Simplify.

Note: $3\frac{2}{6} = 2 + 1 + \frac{2}{6} = 2 + \frac{6}{6} + \frac{2}{6} = 2 + \frac{8}{6} = 2\frac{8}{6}$

Find each difference.

1. $2\frac{4}{5} = 2\frac{\square}{\square}$

$-\ 1\frac{1}{10} = -\ 1\frac{\square}{\square}$

2. $4\frac{2}{3} = 4\frac{\square}{\square} = 3\frac{\square}{\square}$

$-\ 2\frac{11}{12} = -\ 2\frac{\square}{\square} = -\ 2\frac{\square}{\square}$

3. $5\frac{1}{9} = 5\frac{\square}{\square} = 4\frac{\square}{\square}$

$-\ 2\frac{5}{6} = -\ 2\frac{\square}{\square} = 2\frac{\square}{\square}$

4. $7\frac{2}{15} = 7\frac{\square}{\square} = 6\frac{\square}{\square}$

$-\ 1\frac{7}{10} = -\ 1\frac{\square}{\square} = 1\frac{\square}{\square}$

5. $3\frac{4}{9} - 2\frac{1}{18}$ _____

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

7. $7\frac{2}{7} - 3\frac{5}{6}$ _____

8. $2\frac{7}{18} - 1\frac{3}{4}$ _____

9. $10\frac{3}{7} - 5\frac{1}{14}$ _____

10. $1\frac{5}{8} - 1\frac{1}{6}$ _____

11. $2\frac{1}{5} - 1\frac{4}{9}$ _____

12. $11\frac{3}{5} - 9\frac{17}{20}$ _____

13. $5\frac{5}{36} - 4\frac{8}{9}$ _____

14. $3\frac{2}{9} - 3\frac{2}{3}$ _____

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Multiplication of two or more mixed numbers

Name _____

Date _____

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Find each product. Write all answers in lowest terms. Show your work.

1. $3\frac{1}{3} \times 10\frac{1}{2} = \frac{\overset{5}{\cancel{10}}}{\cancel{3}_{1}} \times \frac{\overset{7}{\cancel{21}}}{\cancel{2}_{1}} = \frac{35}{1} = 35$

2. $5\frac{1}{7} \times 3\frac{1}{9} =$ _____

3. $6\frac{9}{10} \times 8\frac{1}{3} =$ _____

4. $8\frac{2}{9} \times 2\frac{7}{32} =$ _____

5. $3\frac{9}{32} \times 5\frac{3}{25} =$ _____

6. $18\frac{2}{3} \times 7\frac{1}{8} =$ _____

7. $4\frac{4}{5} \times 3\frac{3}{4} =$ _____

8. $2\frac{1}{3} \times 5\frac{1}{4} =$ _____

9. $11\frac{2}{3} \times 1\frac{4}{5} =$ _____

10. $9\frac{5}{6} \times 7\frac{3}{8} =$ _____

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Division of mixed numbers

Name _____

Date _____

Find each quotient. Write all answers in lowest terms. Show your work.

1. $1\frac{11}{14} \div 2\frac{1}{7} = \frac{25}{14} \div \frac{15}{7} = \frac{\overset{5}{\cancel{25}}}{\underset{2}{\cancel{14}}} \times \frac{\overset{1}{\cancel{7}}}{\underset{3}{\cancel{15}}} = \frac{5}{6}$

2. $3\frac{1}{2} \div 2\frac{5}{8} =$ _____

3. $1\frac{2}{3} \div 2\frac{5}{8} =$ _____

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

5. $10\frac{1}{2} \div \frac{7}{12} =$ _____

6. $3\frac{1}{9} \div 2\frac{2}{5} =$ _____

7. $12\frac{5}{6} \div 8\frac{2}{3} =$ _____

8. $1\frac{1}{9} \div 6\frac{2}{3} =$ _____

9. $4\frac{1}{5} \div 2\frac{4}{5} =$ _____

0. $3\frac{1}{8} \div 3\frac{1}{8} =$ _____

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Name : _____ Score : _____

Teacher : _____ Date : _____

(10)

Simplifying Algebraic Expressions

1) $4 + 3n + 2n - 8$ use $n = -4$

2) $-\frac{-21}{b} + 4$ use $b = -7$

3) $-3 + \frac{4}{f} + 6f$ use $f = 2$

4) $-3 + \frac{12}{z}$ use $z = 6$

5) $6c - c$ use $c = -5$

6) $5 - 8s - 4 + 3s$ use $s = 5$

7) $9 - 6(-3 - 2s)$ use $s = 4$

8) $3(9k + 8)$ use $k = 7$

9) $\frac{16}{f} + 9 - 5f$ use $f = 4$

10) $4w + 6 + 2w$ use $w = -3$

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EVENS ONLY

Name _____ Class _____ Date _____ (11)

Practice 5-7 Solving Equations by Adding or Subtracting Fractions

Practice

Solve each equation.

1. $m - \left(-\frac{7}{10}\right) = -1\frac{1}{5}$ _____
2. $k - \frac{3}{4} = \frac{2}{5}$ _____
3. $x - \frac{5}{6} = \frac{1}{10}$ _____
4. $t - \left(-3\frac{1}{6}\right) = 7\frac{2}{3}$ _____
5. $x + \frac{5}{8} = \frac{7}{8}$ _____
6. $k + \frac{4}{5} = 1\frac{3}{5}$ _____
7. $4 = \frac{4}{9} + y$ _____
8. $h + \left(-\frac{5}{8}\right) = -\frac{5}{12}$ _____
9. $n + \frac{2}{3} = \frac{1}{9}$ _____
10. $e - \frac{11}{16} = -\frac{7}{8}$ _____
11. $w - 14\frac{1}{12} = -2\frac{3}{4}$ _____
12. $v + \left(-4\frac{5}{6}\right) = 2\frac{1}{3}$ _____
13. $a - 9\frac{1}{6} = -3\frac{19}{24}$ _____
14. $f + \left|-3\frac{11}{12}\right| = 18$ _____
15. $z + \left(-3\frac{2}{5}\right) = -4\frac{1}{10}$ _____
16. $x - \frac{7}{15} = \frac{7}{60}$ _____
17. $h - \left(-6\frac{1}{2}\right) = 14\frac{1}{4}$ _____
18. $p - 5\frac{3}{8} = -\frac{11}{24}$ _____

Solve each equation using mental math.

19. $x + \frac{3}{7} = \frac{5}{7}$ _____
20. $k - \frac{8}{9} = -\frac{1}{9}$ _____
21. $a + \frac{1}{9} = \frac{3}{9}$ _____
22. $g - \frac{4}{5} = -\frac{2}{5}$ _____

Write an equation to solve each problem.

23. Pete's papaya tree grew $3\frac{7}{12}$ ft during the year. If its height at the end of the year was $21\frac{1}{6}$ ft, what was its height at the beginning of the year?

_____

24. Lee is $1\frac{3}{4}$ ft taller than Jay. If Lee is $6\frac{1}{4}$ ft tall, how tall is Jay?

_____

ODDS ONLY

Name _____ Class _____ Date _____ (12)

Practice 5-8 Solving Equations by Multiplying Fractions

Solve each equation.

1. $\frac{3}{4}x = \frac{9}{16}$ _____
2. $-\frac{1}{3}p = \frac{1}{4}$ _____
3. $\frac{-3}{8}k = \frac{1}{2}$ _____
4. $\frac{1}{8}h = \frac{1}{10}$ _____
5. $2\frac{2}{3}e = \frac{1}{18}$ _____
6. $-1\frac{2}{7}m = 6$ _____
7. $-\frac{1}{4}p = \frac{1}{18}$ _____
8. $\frac{11}{-12}w = -1$ _____
9. $-3\frac{4}{7}x = 0$ _____
10. $\frac{2}{3}m = 2\frac{2}{9}$ _____
11. $5c = \frac{2}{3}$ _____
12. $-8k = \frac{4}{5}$ _____
13. $\frac{4}{7}y = 4$ _____
14. $2\frac{1}{4}f = \frac{6}{5}$ _____
15. $\frac{10}{11}n = \frac{2}{11}$ _____
16. $\frac{7}{8}c = \frac{7}{6}$ _____

Solve each equation using mental math.

17. $7d = 42$ _____
18. $\frac{1}{4}y = 5$ _____
19. $-3h = \frac{3}{8}$ _____
20. $\frac{1}{5}k = -\frac{1}{3}$ _____

Write an equation to solve each problem.

21. It takes Nancy $1\frac{2}{3}$ min to read 1 page in her social studies book. It took her $22\frac{1}{2}$ min to complete her reading assignment. How long was the assignment? Let m represent the number of pages she read.

_____

22. It takes Gary three hours to drive to Boston. If the trip is 156 miles, what is Gary's average number of miles per hour? Let x represent the miles per hour.

_____

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Name _____ Class _____ Date _____

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Reteaching 7-2 Solving Multi-Step Equations

Solve $6 - 2(x + 5) = 8$

$6 - 2(x + 5) = 8$	
$6 - 2x - 10 = 8$	Distribute.
$-2x - 4 = 8$	Simplify. Think of $6 - 2x$ as $6 + (-2x)$. Then subtract $6 - 10$.
$-2x - 4 + 4 = 8 + 4$	Add 4 to each side.
$-2x = 12$	Simplify.
$\frac{-2x}{-2} = \frac{12}{-2}$	Divide each side by -2.
$x = -6$	Simplify.

Solve each equation.

1. $3(a - 4) = 9$

_____	Distribute.
_____	Add 12 to each side.
_____	Simplify.
_____	Divide each side by 3.
_____	Simplify.

Solve each equation.

2. $n + 5n = 30$ $n =$ _____

3. $y - 4y = 33$ $y =$ _____

4. $12 = 4(b - 2)$ $b =$ _____

5. $-3(k - 4) = -6$ $k =$ _____

6. $m - 3m + 3 = 11$ $m =$ _____

7. $2(x - 9) + 5 = 1$ $x =$ _____

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ALGEBRA WITH PIZZAZZ!
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What Is the Advantage of Buying a Magnetic Bulletin Board?



Solve each equation and find your solution below. Cross out the box containing that solution. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

(1) $3(5x - 4) = 8x + 2$

(2) $9(n + 3) = 7n - 3$

(3) $2(10 - 6x) = x - 8x$

(4) $5a + 4(3a - 8) = 4 + 13a$

(5) $2y + 18 = 12 - 6(y + 7)$

(6) $x - (5 - 3x) = 7x + 4$

(7) $8(m - 5) = 2(3m - 8)$

(8) $-4(3 - 6d) = 9(2d - 2)$

(9) $7(10 - 3w) = 5(15 - 4w)$

(10) $6t + 3(5t - 4) = 12(2t - 5)$

(11) $2(9x - 1) = 99 - 7(3 - 4x)$

(12) $6(5k - 8) - 20 = 11(2k - 3) + 3k$

(13) $-x - (13 + 4x) = -3(5 - 9x) + 2$

QU	IT	HA	I	NG	SA	IS	ST	IC	AC	AN	D	OC	KS	FR	OM	S	CO	EE	RK
4	−2	−5	−11	12	7	2	13	0	−18	−1	−6	16	25	50	−3	−8	−15	11	9

Name : _____ Score : _____ (5)

Teacher : _____ Date : _____

Ratios and Rates

Express each phrase as a rate and unit rate.
(Round your answer to the nearest hundredth.)

	Rate	Unit Rate
1) 9 pencils for 16 dollars	$\frac{16 \text{ dollars}}{9 \text{ pencils}}$	$1.77 \mid pencil
2) 8 batteries cost 13 dollars		
3) 15 dollars for 9 books		
4) 5 calculators cost $190.00		
5) 8 dollars for 3 cans of tuna		
6) 6 movie tickets cost $30.00		
7) 125 miles on 9 gallons of gas		
8) 7 chocolate bars cost 10 dollars		
9) 12 inches of snow in 8 hours		
10) mowed 5 yards for $45.00		

Math 7 – Assignment #4 Name _____

Writing and Solving Proportions Date _____

10

Write a proportion and then solve for the variable.

1. One subscription for \$21. 28 subscriptions for x dollars.

2. 20 ounces at \$7. 17 ounces at y dollars.

3. 2.4 cm represents z km. One cm represents 3.5 km.

4. B liters at \$33. Five liters at \$15.

5. Three packages of cheese for \$7.17. Six packages of cheese for p dollars.

6. 225 bushels for three acres. Q bushels for 9.6 acres.

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Math 7 – Assignment #5

Converting Units

Name _____

Date _____

Convert the following measurements by setting up and solving a proportion.

1. Convert 13 feet to inches.

2. Convert 2,300 centimeters to meters.

3. Convert 336 ounces to pounds.

4. Convert 1.5 hours to minutes.

5. Convert 12 quarts to gallons.

6. Convert 2,500 meters to kilometers.

7. Convert 15,000 pounds to tons.

8. Convert 45 minutes to hours.

9. Convert 12 minutes to seconds.

10. Convert 175 days to weeks.

18

Math 7 – Assignment #8

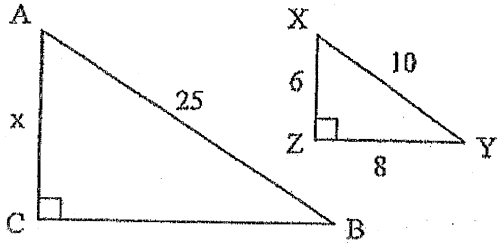
Problem Solving with Similar Figures

Name _____

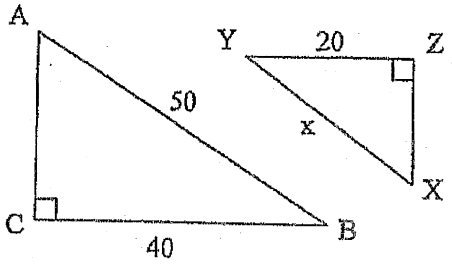
Date _____

Find the missing side lengths in each pair of similar figures.

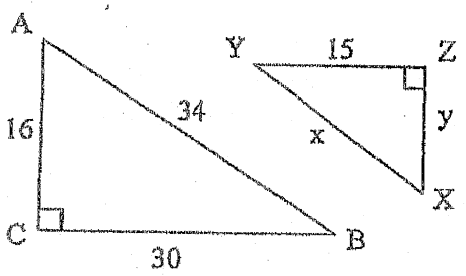
1. $\Delta ABC \sim \Delta XYZ$



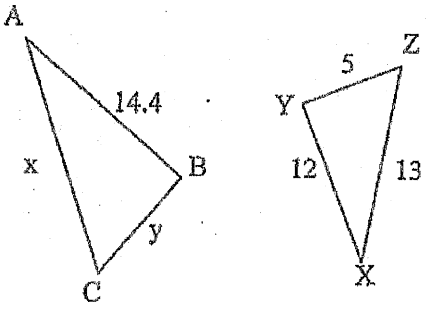
2. $\Delta ABC \sim \Delta XYZ$



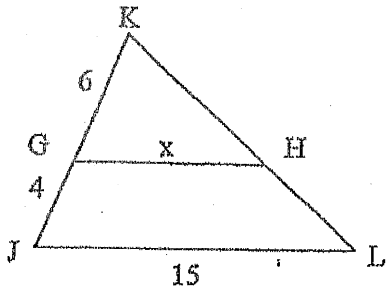
3. $\Delta ABC \sim \Delta XYZ$



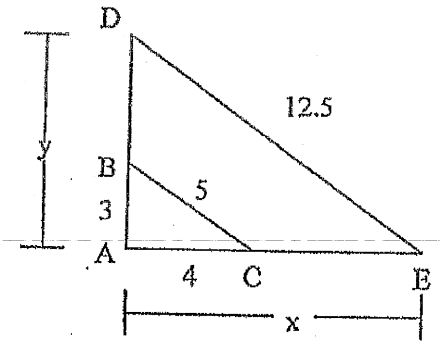
4. $\Delta ABC \sim \Delta XYZ$



5. $\Delta JKL \sim \Delta GKH$



6. $\Delta ABC \sim \Delta ADE$



19

Use similar triangles to find the missing information.

7. A giraffe is 18 feet tall and casts a shadow of 12 feet. Corry casts a shadow of 4 feet. How tall is Corry?

8. When a Ferris wheel casts a 20-meter shadow, a man 1.8 meters tall casts a 2.4-meter shadow. How tall is the Ferris wheel?

9. A flagpole casts a shadow 28 feet long. A person standing nearby casts a shadow eight feet long. If the person is six feet tall, how tall is the flagpole?

10. A photograph measuring four inches wide and five inches long is enlarged to make a wall mural. If the mural is 120 inches wide, how long is the mural?

11. A 9-foot ladder leans against a building six feet above the ground. At what height would a 15-foot ladder touch the building if both ladders form the same angle with the ground?

12. Chris wants to reduce a triangular pattern with sides 16, 16 and 20 centimeters. If the longest side of the new pattern is to be 15 cm, how long should the other two sides be?

Name : _____ Score : _____ 20

Teacher : _____ Date : _____

Converting Between Percents, Decimals, and Fractions

Convert Decimal to Percent

1.85 =	0.44 =	0.163 =
1.22 =	1.94 =	0.66 =

Convert Percent to Decimal

90 % =	150 % =	68 % =
114 % =	76.9 % =	158 % =

Convert Decimal to Fraction

0.19 =	0.11 =	1.19 =
1.88 =	0.259 =	0.5 =

Convert Fraction to Decimal

$\frac{46}{25}$ =	$\frac{15}{25}$ =	$\frac{99}{50}$ =
$\frac{15}{16}$ =	$\frac{1}{8}$ =	$\frac{31}{50}$ =

Convert Fraction to Percent

$\frac{7}{16}$ =	$\frac{72}{50}$ =	$\frac{7}{25}$ =
$\frac{7}{10}$ =	$\frac{55}{50}$ =	$\frac{13}{16}$ =

Convert Percent to Fraction

38 % =	48.9 % =	164 % =
65 % =	32.1 % =	76 % =

Name ODDS ONLY Class _____ Date _____ (21)

Practice 6-7 Percents and Equations

Write and solve an equation. Where necessary, round to the nearest tenth or tenth of a percent.

1. What percent of 25 is 17? _____
2. What percent is 10 of 8? _____
3. What percent is 63 of 84? _____
4. What percent is 3 of 600? _____
5. Find 45% of 60. _____
6. Find 325% of 52. _____
7. Find $66\frac{2}{3}$% of 87. _____
8. Find 1% of 3,620. _____
9. $62\frac{1}{2}$% of x is 5. What is x? _____
10. 300% of k is 42. What is k? _____
11. $33\frac{1}{3}$% of p is 19. What is p? _____
12. 70% of c is 49. What is c? _____
13. 15% of n is 1,050. What is n? _____
14. 38% of y is 494. What is y? _____
15. A camera regularly priced at $295 was placed on sale at $236. What percent of the regular price was the sale price?

_____

16. Nine hundred thirty-six students, 65% of the entire student body, attended the football game. Find the size of the student body.

_____

Practice

Name EVENS ONLY Class _____ Date _____ (22)

Practice 6-8 Percent of Change

Find each percent of change. Round to the nearest tenth of a percent. Tell whether the change is an increase or a decrease.

1. 24 to 21 _____
2. 64 to 80 _____
3. 100 to 113 _____
4. 50 to 41 _____
5. 63 to 105 _____
6. 42 to 168 _____
7. 80 to 24 _____
8. 200 to 158 _____
9. 56 to 71 _____
10. 127 to 84 _____
11. 20 to 24 _____
12. 44 to 22 _____
13. 16 to 12 _____
14. 10 to 100 _____
15. 20 to 40 _____
16. 10 to 50 _____
17. 12 to 16 _____
18. 80 to 100 _____
19. 69 to 117 _____
20. 19 to 9 _____
21. 95 to 145 _____
22. 88 to 26 _____

23. Mark weighed 110 pounds last year. He weighs 119 pounds this year. What is the percent of increase in his weight, to the nearest tenth of a percent?

_____

24. Susan had $140 in her savings account last month. She added $20 this month and earned $.50 interest. What is the percent of increase in the amount in her savings account to the nearest tenth of a percent?

_____

25. The population density of California was 151.4 people per square mile in 1980. By 1990 it had increased to 190.8 people per square mile. Find the percent increase to the nearest percent.

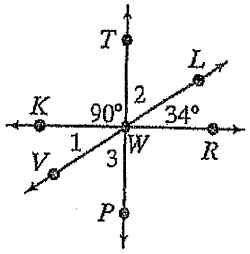
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Name _____ Class _____ Date _____

Practice 9-2 Angle Relationships and Parallel Lines

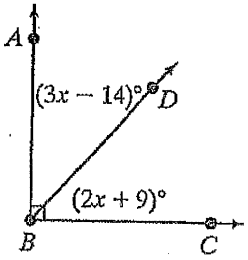
Find the measure of each angle in the figure at the right.



1. $m\angle 1$ _____ 2. $m\angle 2$ _____

3. $m\angle 3$ _____ 4. $m\angle VWR$ _____

Use the figure at the right for Exercises 5-8.



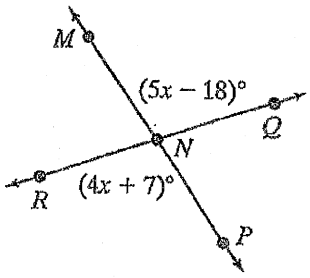
5. Write an equation. _____

6. Find the value of x. _____

7. Find $m\angle ABD$. _____

8. Find $m\angle DBC$. _____

Use the figure at the right for Exercises 9-12.



9. Write an equation. _____

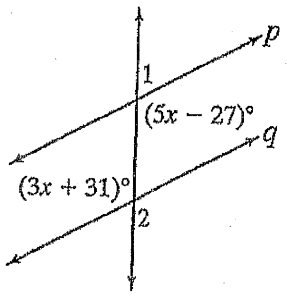
10. Find the value of x. _____

11. Find $m\angle MNQ$. _____

12. Find $m\angle MNR$. _____

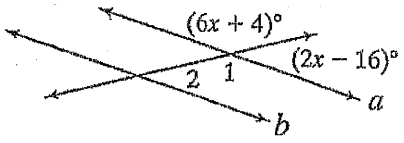
In each figure, find the measures of $\angle 1$ and $\angle 2$.

13. Given $p \parallel q$.



$m\angle 1 =$ _____ $m\angle 2 =$ _____

14. Given $a \parallel b$.



$m\angle 1 =$ _____ $m\angle 2 =$ _____

15. Find a pair of complementary angles such that the difference of their measures is 12°.

_____

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Name _____ Class _____ Date _____

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Reteaching 8-7

Areas of Polygons

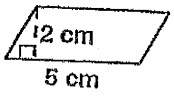
Example 1: Find the area of the parallelogram. Use the formula below.

Area = base × height

$A = bh$

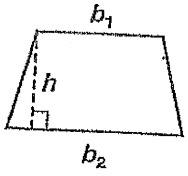
$= 5 \times 2$

$= 10 \text{ cm}^2$



The area of a trapezoid is half the product of the height and the sum of the lengths of the bases.

$A = \frac{1}{2}h(b_1 + b_2)$



Example 2: Find the area of the triangle. You can cut a parallelogram into two congruent triangles. So, the area of a triangle is half the area of a parallelogram.

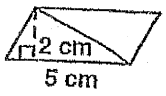
To find the area of a triangle, use this formula.

Area = $\frac{1}{2}$base × height

$A = \frac{1}{2}bh$

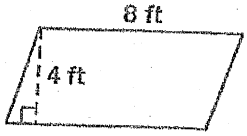
$= \frac{1}{2} \times 5 \times 2$

$= 5 \text{ cm}^2$



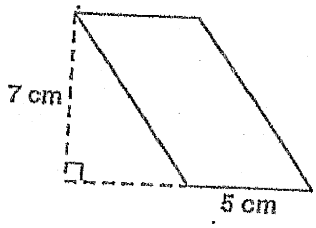
Find the area of each parallelogram.

1.



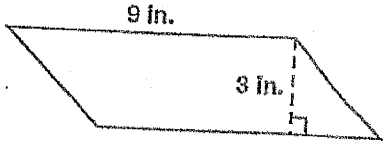
$A =$ _____

2.



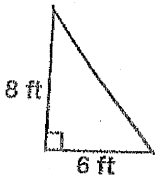
$A =$ _____

3.



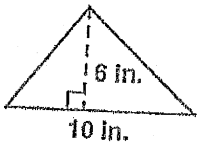
$A =$ _____

nd the area of each triangle.



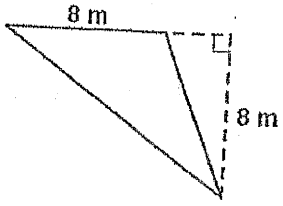
$A =$ _____

5.



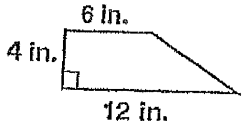
$A =$ _____

6.



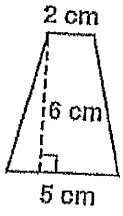
$A =$ _____

l the area of each trapezoid.



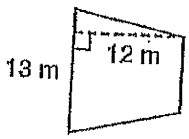
$A =$ _____

8.



$A =$ _____

9.



$A =$

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Name _____ Class _____ Date _____

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Reteaching 8-8

Circumferences and Areas of Circles

The distance around a circle is called the *circumference.*

- You can use a formula to find the circumference (C) of a circle. *Pi* (π) is approximately equal to ($\approx$) 3.14.

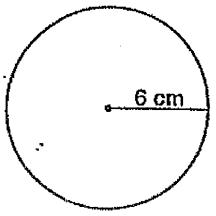
  Circumference $= 2 \times \pi \times$ radius

  $C = 2\pi r$

- If you know the diameter, use this formula:

  Circumference $= \pi \times$ diameter

  $C = \pi d$



Circumference $= 2 \times \pi \times r$

$C = 2 \times \pi \times 6$

≈ 37.7 cm

To find the *area of a circle,* use this formula:

Area $= \pi \times$ radius^2

$A = \pi r^2$

Area $= \pi \times r^2$

$A = \pi \times 6^2$

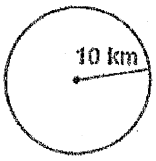
≈ 113.1 cm^2

The circumference of the circle is about 37.7 cm. The area of the circle is about 113.1 cm^2.

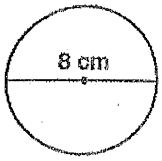
Find the circumference and area of each circle. Round to the nearest tenth.

1. 

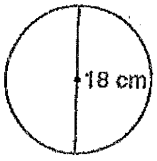
$C \approx$ _____ $A \approx$ _____

2. 

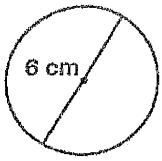
$C \approx$ _____ $A \approx$ _____

3. 

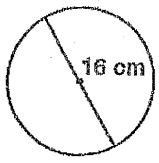
$C \approx$ _____ $A \approx$ _____

4. 

$C \approx$ _____ $A \approx$ _____

5. 

$C \approx$ _____ $A \approx$ _____

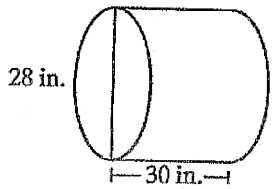
6. 

$C \approx$ _____ $A \approx$ _____

Name _____ Class _____ Date _____ 20

Reteaching 10-7 Volume: Prisms and Cylinders

Find the volume of the cylinder.



$V = Bh$ Use the formula for volume.

$V = \pi r^2 h$ $B = \pi r^2$ since the base is a circle.

$r = \frac{1}{2}d = \frac{1}{2}(28)$ Find r from $d = 28$.

$= 14$

$V = \pi r^2 h$

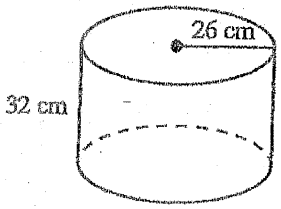
$V = \pi(14)^2(30)$ Substitute 14 for r and 30 for h.

$\approx 18{,}463.2$ Multiply. Use 3.14 for π.

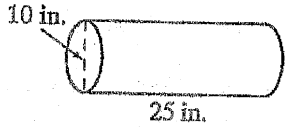
The volume is about 18,463 in.^{3} Don't forget to use cubic units.

Find the volume of each prism or cylinder to the nearest cubic unit.

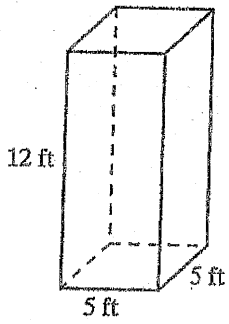
1.



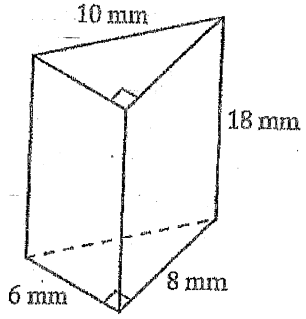
2.



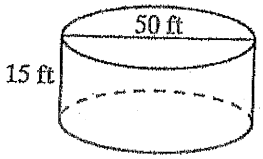
3.



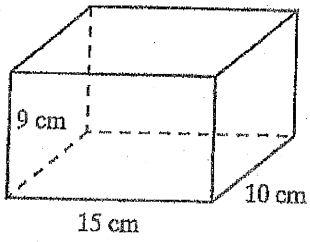
4.



5.



6.



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Name _____ Class _____ Date _____ 27

Practice 8-3

Slope and *y*-intercept

Find the slope of the line through each pair of points.

1. $A(1, 1), B(6, 3)$

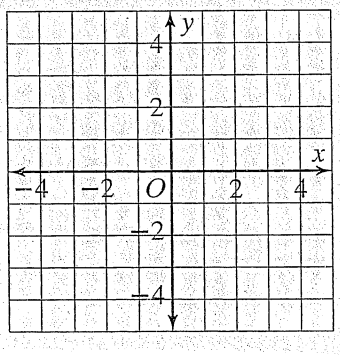
2. $J(-4, 6), K(-4, 2)$

3. $P(3, -7), Q(-1, -7)$

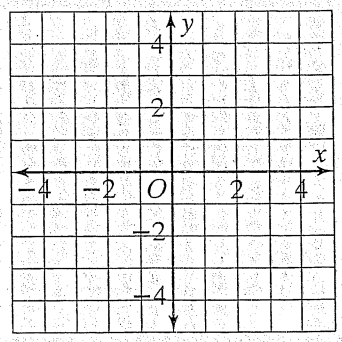
4. $M(7, 2), N(-1, 3)$

Graph the given equations on the coordinate axes.

5 a. $y = \frac{2}{3}x + 2$
b. $y = -\frac{3}{2}x - 1$

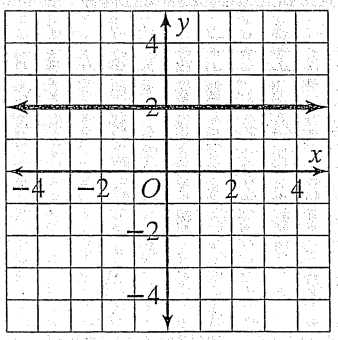


6 a. $y = 4x - 3$
b. $y = -\frac{1}{4}x + 1$

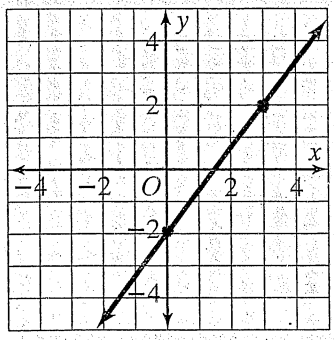


Find the slope of each line.

7. _____

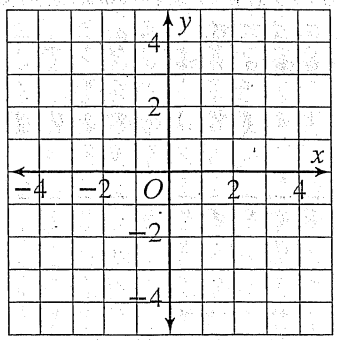


8. _____

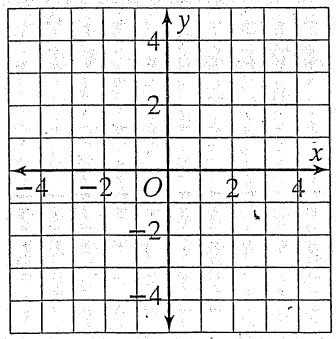


Graph each equation.

9. $y = -2x + 3$



10. $y = \frac{1}{3}x - 1$



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