

**Final Exam Review #1  
Pre Algebra Cumulative**

**KEEP FOR FUTURE REFERENCE!**

**Properties**

Associative	Distributive	Multiplicative Inverse
Commutative	Additive Inverse	

**Number Sets**

Counting Numbers	Integers	Rational
Whole Numbers	Digits	Irrational

<b><u>Function</u></b>	<b><u>Simple Interest</u></b>	<b><u>Percent Change</u></b>
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## Pre Algebra Cumulative Review Questions

1. Find the simple interest on \$6000 invested for 8 years at 4%.
2. What is the reciprocal of  $\frac{4}{7}$ ? (use  $/$  to show the fraction)
3. What property is shown:  $4 + 6 = 6 + 4$
4. Is the following relation a function?  $\{ (1, 2), (2, 3), (3, 3) \}$
5. Last week Dunkin Donuts medium coffee cost \$1.63. This week the same coffee cost \$1.74. Find the percent of increase *to the nearest tenth of a percent* in the price of the coffee at Dunkin Donuts.
6. Is  $-3\pi$  a rational or irrational number?
7. Is  $\frac{2}{3}$  a rational or irrational number?
8. Is  $8.62626\dots$  a rational or irrational number?
9. Is  $\sqrt{121}$  a rational or irrational number?
10. Is  $\sqrt{6}$  a rational or irrational number?

**Final Exam Review #2**  
**Formulas**

Pythagorean Theorem	Perimeter	Circumference
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**Volume**

Rectangular Solid (box)	Cylinder (given on exam)
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**Area**

Triangle	Parallelogram	Trapezoid (given on final)
Square or Rectangle	Circle	Shaded Area

<b><u>Supplementary</u></b>	<b><u>Complementary</u></b>
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<b><u>Ratio Word Problems</u></b>
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## Pre Algebra Cumulative Review Questions

1. Find the area of a circle *to the nearest tenth* whose diameter is 6 cm.
2. Two complementary angles are in the ratio 5:7. What is the measure of the smaller angle?
3. What is the volume of a cylinder *to the nearest tenth* whose radius is 4 and whose height is 9.
4. The perimeter of a rectangle is 338 feet. If the ratio of the length to the width is 8:5, find the length.
5. A right triangle has a base of 16m and a hypotenuse of 20 m. What is the height of the triangle?

**Final Exam Review #3**  
**Two Parallel Lines Cut by a Transversal**

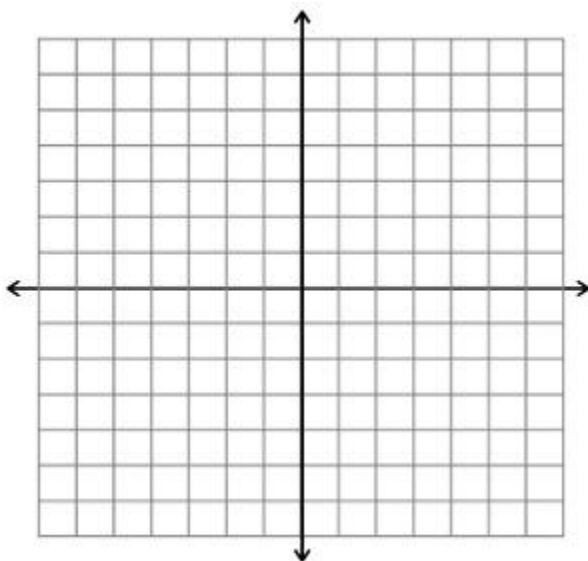
Vertical	Corresponding	Alternate Exterior
Linear Pair	Alternate Interior	

**Graphing**

$y = mx + b$	Vertical Lines
	Horizontal Lines
Slope	Writing Equations of Lines

## Pre Algebra Cumulative Review Questions

1. What is the slope of the line  $x = 6$ ?
2. What is the slope of the line  $y = 3$ ?
3. What is the slope of the line  $5y - 3x = 10$ ?
4. What is the slope of the line connecting the points  $(3, 5)$  and  $(6, -7)$ ?
5. Write the equation of a line that passes through the point  $(-3, 5)$  that has a slope of  $-2$ .
6. Graph the following line:  $3x - 4y = -8$



Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

**Review Sheet #4**

**Due Date:** \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

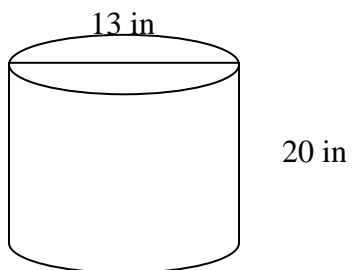
\_\_\_\_\_ 1. Solve for  $n$ :  $8 - \frac{2}{3}n = 12$

- (1) 6    (2) -6    (3)  $\frac{8}{3}$     (4)  $-\frac{8}{3}$

\_\_\_\_\_ 2. The inequality  $3x - 6 < 6x + 18$  is equivalent to

- (1)  $x > -8$     (2)  $x < -8$     (3)  $x < 24$     (4)  $x > 24$

\_\_\_\_\_ 3. In terms of  $\pi$ , what is the volume of



- (1)  $3380\pi \text{ in}^3$     (3)  $845\pi \text{ in}^3$   
(2)  $260\pi \text{ in}^3$     (4)  $10613.2\pi \text{ in}^3$

\_\_\_\_\_ 4. What is the slope of a line whose equation is  $4y - 6x = 20$ ?

- (1) -6    (2) 20    (3)  $\frac{3}{2}$     (4) 4

\_\_\_\_\_ 5. The reciprocal of  $\frac{7}{3}$  is

- (1)  $\frac{7}{3}$     (2)  $-\frac{7}{3}$     (3)  $2\frac{1}{3}$     (4)  $\frac{3}{7}$

**Part II:** Each correct solution will receive 2 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

6. a) Perform the indicated operation:  $-6x^2(-3x^2 + 5x - 6)$

b) State the name of the property used.

**Part III:** Each correct solution will receive 3 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

7. Write the equation of a line whose slope is  $-\frac{3}{4}$  that passes through the point  $(-8, -7)$ .



Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

Review Sheet #5

Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. Which number is irrational?

- (1)  $-\frac{4}{3}$  (2)  $\sqrt{121}$  (3)  $-8\pi$  (4)  $\sqrt{\frac{25}{49}}$

\_\_\_\_\_ 2. If 24.5 is 35% of a number, what is the number?

- (1) 70 (2) 0.7 (3) 7 (4) 857.5

\_\_\_\_\_ 3. What are the factors of  $x^2 - 10x + 24$ ?

- (1)  $(x - 12)(x + 2)$  (3)  $(x - 6)(x + 4)$   
(2)  $(x - 2)(x + 12)$  (4)  $(x - 4)(x - 6)$

\_\_\_\_\_ 4. The measure of two supplementary angles are in the ratio 7:5. What is the measure, in degrees, of the smaller angle?

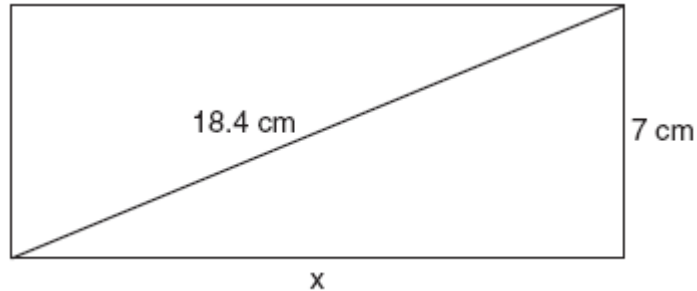
- (1) 15 (2) 105 (3) 75 (4) 50

\_\_\_\_\_ 5. Which is true of the graph of  $x = -3$ ?

- (1) It has a slope of -3.  
(2) It is a horizontal line.  
(3) It contains the point (0, -3)  
(4) Its slope is undefined.

**Part II:** Each correct solution will receive 2 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

6. The rectangle shown has a diagonal of 18.4 cm and a width of 7 cm. To the *nearest centimeter*, what is the length,  $x$ , of the rectangle?



**Part III:** Each correct solution will receive 3 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

7. The sides of a rectangle are in the ratio 5:12. The perimeter of the rectangle is 102 meters. Determine the length of **each side** of the rectangle.

Name: \_\_\_\_\_

Period: \_\_\_\_\_

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Review Sheet #6

Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

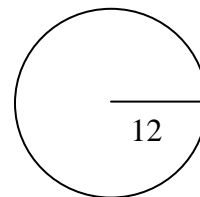
**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. What is the greatest common factor of  $42a^3b^2$  and  $28ab^3$

- (1)  $7ab^2$  (2)  $7a^4b^5$  (3)  $14ab^2$  (4)  $14a^4b^5$

\_\_\_\_\_ 4. What is the circumference of the circle below in terms of  $\pi$ ?



- (1)  $24\pi$  (2)  $144\pi$  (3)  $12\pi$  (4)  $6\pi$

\_\_\_\_\_ 2. What is  $(3x^2 + 3x - 6)$  subtracted from  $(5x^2 - 4x + 9)$ ?

- (1)  $-2x^2 + 7x - 15$  (3)  $-2x^2 + 7x + 3$   
(2)  $2x^2 - 7x + 15$  (4)  $2x^2 - x + 3$

\_\_\_\_\_ 5. What is the product of  $-27x^5y^2$  and  $-2xy^3$

- (1)  $-29x^5y^5$  (2)  $54x^5y^5$  (3)  $54x^6y^5$  (4)  $54x^5y^6$

\_\_\_\_\_ 3. If the length of a rectangular pool is represented by  $3x + 2$  and the width of the pool is represented by  $5x$ , its perimeter would be represented by

- (1)  $8x + 2$  (2)  $16x + 2$  (3)  $15x^2 + 10x$  (4)  $16x + 4$

**Part II:** Each correct solution will receive 2 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

6. Factor:  $25x^2 - 30x^3$

**Part III:** Each correct solution will receive 3 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

7. In April 2010 the average gas price in Western New York was \$3.02. In April 2011 the average gas price was \$4.01. Find the percent of increase in gas prices from April 2010 to April 2011 *to the nearest tenth of a percent*.

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

Review Sheet #7

Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. Which of the following is an illustration of the distributive property?

- (1)  $5 + 6 = 6 + 5$       (2)  $4(3x - 2) = 12x - 8$   
(3)  $9 + 0 = 9$       (4)  $(2 + 4) + 1 = 2 + (4 + 1)$

\_\_\_\_\_ 2. If  $f(x) = 3x^2 - 5x + 7$ , then  $f(4)$  is:

- (1) 117      (2) 131      (3) 5      (4) 35

\_\_\_\_\_ 3. The expression  $(a + 5)(a - 5)$  is equivalent to

- (1)  $2a + 25$       (2)  $a^2 - 10a - 10$   
(3)  $a^2 - 25$       (4)  $a^2 - 10$

\_\_\_\_\_ 4. Put the following numbers in order from smallest to greatest:

- $\sqrt{11}$ ,  $3\bar{3}$ ,  $\frac{11}{3}$ , 3  
(1) 3,  $\frac{11}{3}$ ,  $3\bar{3}$ ,  $\sqrt{11}$   
(2)  $\sqrt{11}$ ,  $\frac{11}{3}$ ,  $3\bar{3}$ , 3  
(3) 3,  $\sqrt{11}$ ,  $3\bar{3}$ ,  $\frac{11}{3}$   
(4)  $\sqrt{11}$ ,  $3\bar{3}$ ,  $\frac{11}{3}$ , 3

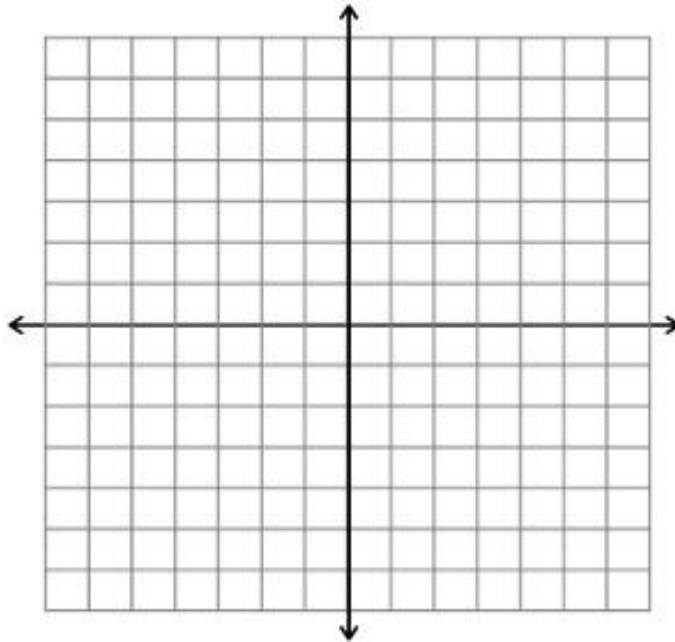
\_\_\_\_\_ 5. The simple interest on a \$14,000 investment after 5 years at a 12% rate is

- (1) \$8,400      (2) \$84,000  
(3) \$840      (4) \$840,000

**Part III:** Each correct solution will receive 3 credits. Show all work including formulas and substitutions. A correct answer with no work shown will only receive 1 credit.

6. Quadrilateral ABCD has vertices A (-3, 1); B (-1,-6); C (7,-6); D (5, 1)

a) On the accompanying graph construct and label the above quadrilateral ABCD.

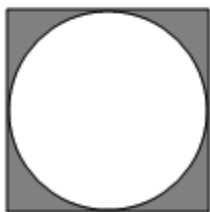


b) Find the area of quadrilateral ABCD.

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**Part IV:** Each correct solution will receive 4 credits. Show all work including formulas and substitutions. A correct answer with no work shown will only receive 1 credit.

7. Determine the area of the shaded region; round your answer to the nearest tenth.



10 in  
10 in

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

Review Sheet #8

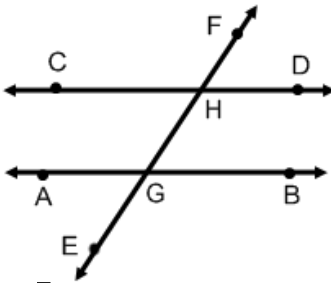
Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

- \_\_\_\_\_ 1. In the accompanying diagram, AB is parallel to CD, transversal EF intersects AB and CD at G and H respectively. If  $m\angle CHF = 2x + 12$  and  $m\angle AGH = 4x - 40$ , find the value of  $x$ .



- (1)  $34.\bar{6}$             (3) 26  
(2) 180                (4) 15

- \_\_\_\_\_ 2. Add  $3\frac{1}{9} + 4\frac{1}{5}$

- (1)  $\frac{31}{14}$                 (3)  $\frac{-139}{45}$   
(2)  $\frac{7}{14}$                  (4)  $\frac{329}{45}$

- \_\_\_\_\_ 3. The set of integers numbers is best represented by

- (1)  $\{1, 2, 3, 4, \dots\}$   
(2)  $\{0, 1, 2, 3, 4, \dots\}$   
(3)  $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$   
(4)  $\{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$

- \_\_\_\_\_ 4. The product of two negative numbers always has to be

- (1) Negative            (3) Zero  
(2) Positive             (4) A Fraction

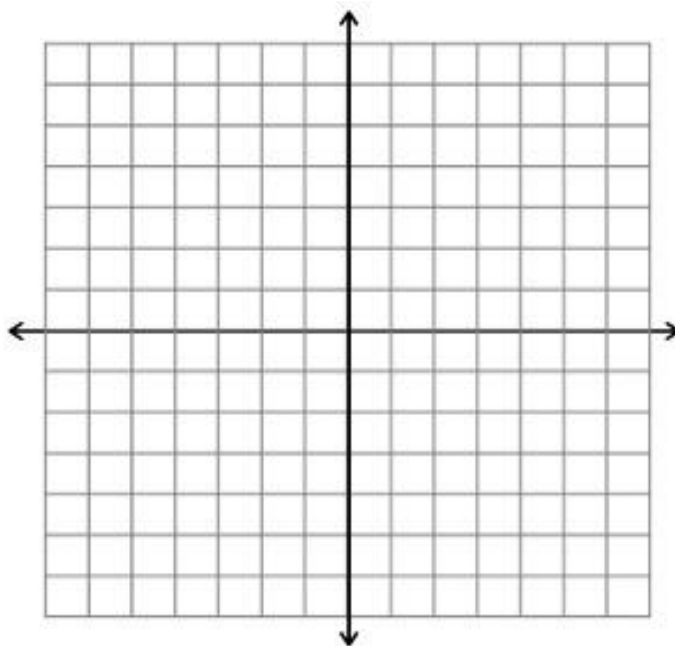
- \_\_\_\_\_ 5. Which verbal expression is represented by  $7x - 5$ ?

- (1) The sum of 7 and 5 times  $x$ .  
(2) The sum of 5 times  $x$  and 7  
(3) Seven less than 5 times  $x$ .  
(4) 5 less than 7 times  $x$ .

Part IV: Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only one credit.

6. Graph and label the following equation on the set of axes below

$$2y + 4x = 12$$





Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

Review Sheet #9

Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. Which expression represents  $\frac{-25a^5c^8}{-5a^2c}$  in simplest form?

- (1)  $-5a^7c^9$                       (3)  $5a^7c^9$   
(2)  $5a^3c^7$                         (4)  $-5a^3c^7$

\_\_\_\_\_ 2. What is the slope of the line that passes through the points (2,6) and (5,-3)?

- (1)  $\frac{1}{3}$                                 (3) 3  
(2)  $-\frac{1}{3}$                                 (4) -3

\_\_\_\_\_ 3. Which shape is also a parallelogram?

- (1) Triangle                      (3) Trapezoid  
(2) Square                        (4) Pentagon

\_\_\_\_\_ 4. If Abby can knit 7 scarves in 2 hours, how many hours will it take her to knit 63 scarves?

- (1) 6                                (3) 9  
(2) 220.5                        (4) 18

\_\_\_\_\_ 5. Which relation is *not* a function?

- (1) {(2, 5), (1, 6), (4,6), (5, 7)}  
(2) {(2, 7), (3, 1), (-2, 6), (-3, 4)}  
(3) {(-4, 6), (4, 3), (6, 5), (4, 7)}  
(4) {(-5, 2), (0, 5), (5, 0), (2, -1)}

**Part IV: Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only one credit.**

6. Jasper is painting the outside of a box, including the top and bottom. The box measures 6 feet long, 2.5 feet wide, and 3 feet high. What is the total surface area she will paint?

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

**Review Sheet #10**

**Due Date:** \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. 4 is 5% of a number. What is the number?  
a. 18 b. 20 c. 80 d. 0.2

\_\_\_\_\_ 2. In terms of  $\pi$ , what is the VOLUME of a cylinder that has a radius of 8cm and a height of 50 cm?  
a.  $400\pi \text{ cm}^3$  c.  $3200\pi \text{ cm}^3$   
b.  $12,800\pi \text{ cm}^3$  d.  $800\pi \text{ cm}^3$

\_\_\_\_\_ 3. Which is true of the graph  $y = -3$   
a. its slope is undefined  
b. it is parallel to the y-axis  
c. it has a zero slope  
d. it contains the point  $(-3, 3)$

\_\_\_\_\_ 4. Which of the following is an illustration of the Associative Property?  
a.  $7(2 + 3) = 7(2) + 7(3)$   
b.  $9 + 4 = 4 + 9$   
c.  $2 + (4 + 6) = (2 + 4) + 6$   
d.  $12 + 0 = 12$

\_\_\_\_\_ 5. If the dimensions of a rectangular lot is represented as  $9x - 5$  by  $4x$ . Its perimeter would be represented by which of the following?  
a.  $26x - 10$  c.  $18x - 5$   
b.  $13x - 5$  d.  $26x + 10$

\_\_\_\_\_ 6. Put the following numbers in order from GREATEST to SMALLEST

$$3.7, \sqrt{14}, 3\frac{4}{5}, \sqrt{9}, \frac{13}{4}$$

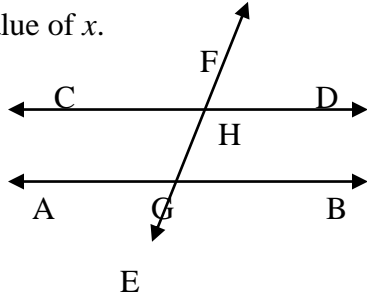
- a.  $\sqrt{14}, \frac{13}{4}, \sqrt{9}, 3.7, 3\frac{4}{5}$ ,  
b.  $3\frac{4}{5}, \sqrt{14}, \frac{13}{4}, \sqrt{9}, 3.7$   
c.  $\sqrt{9}, \frac{13}{4}, 3.7, \sqrt{14}, 3\frac{4}{5}$   
d.  $3\frac{4}{5}, \sqrt{14}, 3.7, \frac{13}{4}, \sqrt{9}$

\_\_\_\_\_ 7. What is the slope of the line that passes through the points  $(-5, -2)$  and  $(7, -8)$ ?

- a.  $\frac{1}{2}$  b.  $\frac{1}{3}$  c.  $-\frac{1}{3}$  d.  $-\frac{1}{2}$

\_\_\_\_\_ 8. The PRODUCT of two negative numbers always has to be?  
a. negative b. zero c. positive d. a fraction

9. In the accompanying diagram, AB is parallel to CD, transversal EF intersects AB and CD at G and H respectively. If  $m\angle CHG = 5x - 10$  and  $m\angle HGB = 3x + 60$  find the value of  $x$ .



- a. 16   b. 35   c. 180   d. 90
10. Which relation is a function?
- a.  $(-3, 4), (6, -1), (-1, 6), (-3, 8)$   
 b.  $(7, -5), (3, -4), (-9, 0), (3, 2)$   
 c.  $(8, 6), (0, -1), (-8, -1), (3, -2)$   
 d.  $(1, -1), (3, 0), (1, 5), (0, 2)$

**Part II:**      **Each correct solution will receive 2 credits. Show all work. A correct answer with no work shown will only receive 1 credit.**

11a. Perform the indicated operation:  $-7x^2(2x - 3)$

12. Factor:  $18x^3 - 36x^2$

b. What property was used above?

**Part III:**      **Each correct solution will receive 3 credits. Show all work. A correct answer with no work shown will only receive 1 credit.**

13. Write the equation of a line whose slope is  $\frac{1}{2}$  and passes through the point  $(4, 2)$

**Part IV:**      **Each correct solution will receive 4 credits. Show all work. A correct answer with no work shown will only receive 1 credit.**

14. What is the TOTAL SURFACE AREA of a sandbox that measures 6.5 ft long, 4.5 ft. wide and 1.5 ft. high?

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

Review Sheet #11

Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. Solve for x:  $11 + \frac{3}{4}x = -16$   
a. 36   b. -36   c. 32   d. -32

6. In terms of  $\pi$ , what is the circumference of a circle whose radius is 9  
a.  $9\pi$    b.  $4.5\pi$    c.  $81\pi$    d.  $18\pi$

\_\_\_\_\_ 2. Factor:  $p^2 - 5p - 24$   
a.  $(p - 8)(p + 3)$    c.  $(p - 6)(p + 4)$   
b.  $(p + 8)(p - 3)$    d.  $(p + 6)(p - 4)$

7. The simple interest on a \$3000 investment after 4 years at a 15% rate is  
a. \$180   b. \$1,800   c. \$18,000   d. \$180,000

\_\_\_\_\_ 3. What is the slope of the line:  $3x - 2y = 9$   
a.  $\frac{2}{3}$    b.  $-\frac{2}{3}$    c.  $-\frac{3}{2}$    d.  $\frac{3}{2}$

8. Add:  $5\frac{1}{8} + 6\frac{2}{3}$   
a.  $-\frac{37}{24}$    b.  $\frac{124}{11}$    c.  $\frac{283}{24}$    d.  $\frac{37}{24}$

\_\_\_\_\_ 4. What is the GCF of:  $16x^2y^3$  and  $20xy^4$   
a.  $5xy^3$    b.  $2xy^3$    c.  $4xy^3$    d.  $2x^2y^3$

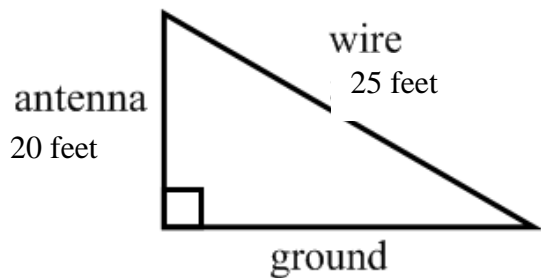
9. Name 3 shapes that are included in the parallelogram family  
\_\_\_\_\_,  
\_\_\_\_\_, and  
\_\_\_\_\_

\_\_\_\_\_ 5. If  $f(x) = 2x^2 - 3x + 4$ , then  $f(-2)$  is  
a. 14   b. 18   c. 26   d. -14

10. Which verbal expression is represented by  $2x - 6$   
a. twice x less than 6  
b. twice the difference of x and 6  
c. the sum of twice x and 6  
d. 6 less than twice x

**Part II:** Each correct solution will receive 2 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

11. Find the distance on the ground between the antenna and the wire.



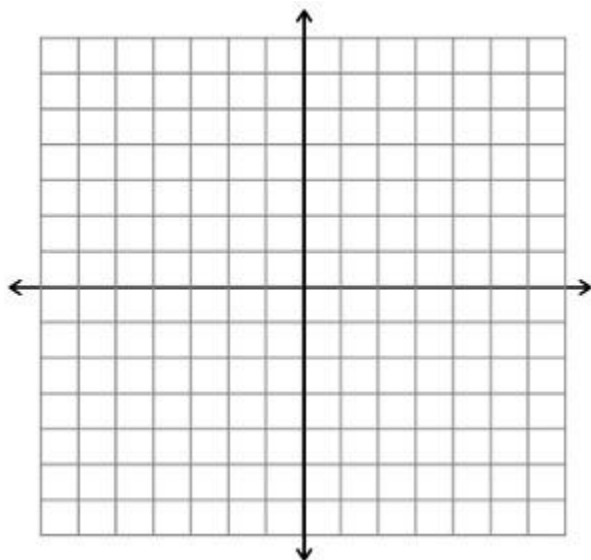
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12. The sides of a triangle are in the ratio 4: 9: 14. The perimeter of the triangle is 108 cm. Determine the length of EACH side of the triangle.

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**Part IV:** Each correct solution will receive 4 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

13. Graph and label the following:  $3y - x = 3$



Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

Review Sheet #12

Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. Which number is RATIONAL?

- a.  $\pi$     b.  $\sqrt{7}$     c.  $\frac{5}{4}$     d.  $\sqrt{\frac{3}{4}}$

\_\_\_\_\_ 2. The inequality  $6x - 1 < x + 14$  is equivalent to:

- a.  $x < 3$                       c.  $x \geq 3$   
b.  $x > 3$                       d.  $x \leq -3$

\_\_\_\_\_ 3. The measure of two complementary angles are in the ratio 7:11. What is the measure of the SMALLER angle?

- a. 5    b. 55    c. 90    d. 35

\_\_\_\_\_ 4. What is the reciprocal of  $-\frac{3}{8}$

- a.  $\frac{8}{3}$     b.  $-\frac{8}{3}$     c.  $\frac{3}{8}$     d.  $-\frac{3}{8}$

\_\_\_\_\_ 5. What is the sum of  $8m^2 - 4m + 2$  and  $m^2 - 6m - 3$

- a.  $9m^2 + 2m - 1$   
b.  $9m^2 + 10m + 1$   
c.  $9m^2 - 10m - 1$   
d.  $9m^2 + 10m + 5$

\_\_\_\_\_ 6. The expression  $(x - 5)(x - 5)$  is equivalent to

- a.  $x^2 + 25$                       c.  $x^2 - 25$   
b.  $x^2 - 10x + 25$               d.  $x^2 + 10x + 25$

\_\_\_\_\_ 7. What is the product of  $-4xy^2$  and  $-3x^3y$ ?

- a.  $7x^2y$                           c.  $-12x^4y$   
b.  $-7x^4y^3$                       d.  $12x^4y^3$

\_\_\_\_\_ 8. Which expression represents

$$\frac{-42x^7y^3}{14xy^2}$$

- a.  $-3x^8y^5$                       c.  $-3x^7y$   
b.  $-3x^6y$                         d.  $-3x^6y^5$

\_\_\_\_\_ 9. Which of the following represents the set of WHOLE numbers?

- a.  $\{0,1,2,3,4,5\}$   
b.  $\{\dots -3,-2,-1,0,1,2,3,\dots\}$   
c.  $\{1,2,3,\dots\}$   
d.  $\{0,1,2,3,\dots\}$

\_\_\_\_\_ 10. If a machine that prints on T-Shirts prints 750 shirts in 5 hrs, how many hours will it take to print 975 T-Shirts?

- a. 6.5    b. 7    c. 6    d. 8

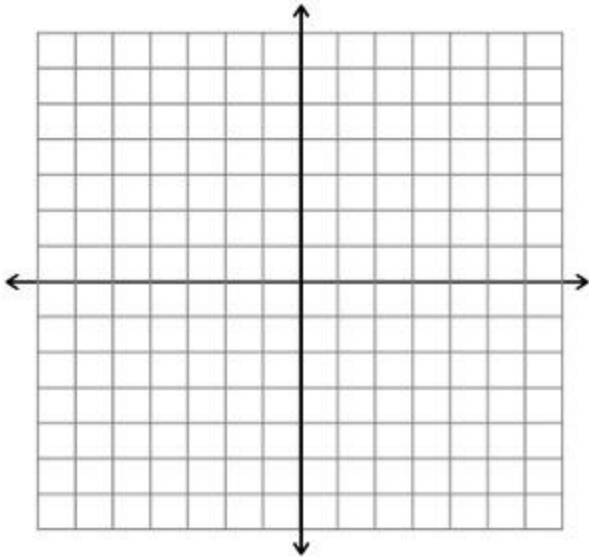
**Part III:** Each correct solution will receive 3 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

11. At the end of week one, a stock had increased in value from \$6.45 a share to \$9.25 a share. Find the percent of increase at the end of week one to the nearest TENTH of a percent?

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12a. On the accompanying graph, construct and label the above quadrilateral ABCD when A (- 4, - 3), B (1, - 3) C (- 2, - 1) D (3, - 1)

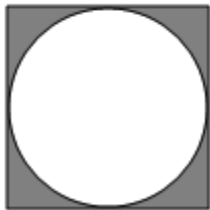
b. Find the area of quadrilateral ABCD



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**Part IV:** Each correct solution will receive 4 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

13. Determine the area of the shaded region; round your answer to the nearest tenth.



18 m



Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

## Review Sheet #13

Due Date: \_\_\_\_\_

**Directions:** SHOW WORK for ALL questions including multiple choice. If there is no work to show, give a definition supporting your answer.

**NO WORK = NO CREDIT**

**If you do not remember how to do a problem you must ask before school (not before class), look in your notes, textbook, or online for assistance.**

\_\_\_\_\_ 1. What are the factors of  $a^2 - 3a - 18$ ?

- (1)  $(a - 6)(a - 3)$       (3)  $(a + 6)(a - 3)$   
 (2)  $(a + 6)(a + 3)$       (4)  $(a - 6)(a + 3)$

\_\_\_\_\_ 2. If 32% of a number is 8.96, what is the number?

- (1) 2800      (2) 0.28      (3) 28      (4) 2.5088

\_\_\_\_\_ 3. Which number is rational?

- (1)  $\sqrt{8}$       (2)  $\sqrt{\frac{5}{16}}$       (3)  $\frac{5}{16}$       (4)  $\pi$

\_\_\_\_\_ 4. Solve for  $m$ :  $7 - \frac{2}{3}m = 13$

- (1) 9      (2) -9      (3) 24      (4) -24

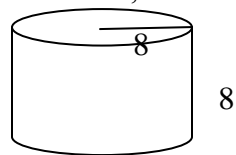
\_\_\_\_\_ 5. The inequality  $9 + 8x \leq 3x + 34$  is equivalent to

- (1)  $x \leq 5$       (2)  $x \geq 5$       (3)  $-5 \leq x$       (4)  $x \leq -5$

\_\_\_\_\_ 6. Which is true of the graph of  $y = -4$ ?

- (1) It is parallel to the y-axis  
 (2) Its slope is zero  
 (3) Its slope is -4  
 (4) It contains the point  $(-4, 4)$

\_\_\_\_\_ 7. In terms of  $\pi$ , what is the volume of



- (1) 512      (2)  $1608.5\pi$       (3)  $64\pi$       (4)  $512\pi$

\_\_\_\_\_ 8. The reciprocal of  $-\frac{5}{12}$  is

- (1)  $-0.41\bar{6}$       (2)  $\frac{12}{5}$       (3)  $\frac{5}{12}$       (4)  $-\frac{12}{5}$

\_\_\_\_\_ 9. What is the slope of the line whose equation is  $6x - 3y = 12$ ?

- (1) 6      (2) -2      (3) 2      (4) 12

\_\_\_\_\_ 10. The measure of two supplementary angles are in the ratio 7:1. What is the measure, in degrees, of the smaller angle?

- (1) 22.5      (2) 157.5      (3) 173      (4) 25.7

\_\_\_\_\_ 11. If  $f(x) = 2x^2 + 3x - 5$  then  $f(-4)$  is

- (1) 16      (2) 39      (3) 71      (4) 15

\_\_\_\_\_ 12. What is the sum of  $(2x^2 + 3x - 1)$  and  $(4x^2 - 1)$ ?

- (1)  $6x^4 + 3x$       (3)  $6x^2 + 3x$   
(2)  $6x^4 + 3x + 2$       (4)  $6x^2 + 3x - 2$

\_\_\_\_\_ 13. The greatest common factor of  $48a^5b^2$  and  $32ab^3$  is

- (1)  $4ab^2$    (2)  $16ab^2$    (3)  $4a^6b^5$    (4)  $16a^4b$

\_\_\_\_\_ 14. Which of the following is an illustration of the associative property?

- (1)  $a + (b + c) = (a + b) + c$   
(2)  $a + (b + c) = (b + c) + a$   
(3)  $a(b + c) = ab + bc$   
(4)  $a + 0 = a$

\_\_\_\_\_ 15. If the length of a rectangle is represented by  $3x + 2$  and its width by  $5x$ , its perimeter would be represented by

- (1)  $8x + 12$       (3)  $13x + 2$   
(2)  $15x^2 + 10x$       (4)  $16x + 4$

**Part II:** Each correct solution will receive 2 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

16. a. Perform the indicated operation:

$$\frac{2}{3} + -\frac{2}{3}$$

b. State the property illustrated above.

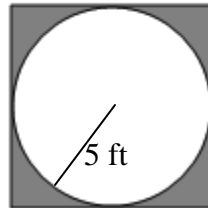
17. Factor  $16x^2 - 12x$

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**Part III:** Each correct solution will receive 3 credits. Show all work. A correct answer with no work shown will only receive 1 credit.

18. Write the equation of a line whose slope is -6 that passes through the point (4, -12)

19. Determine the area of the shaded region; round your answer to the *nearest tenth*.



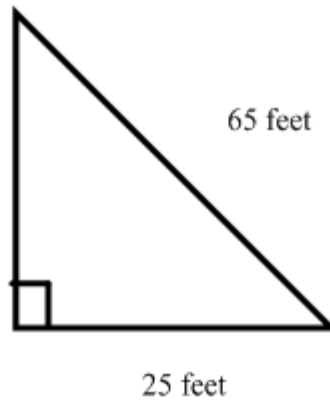


<p>7. Which expression represents <math>\frac{12x^4y^3z}{-3x^2y}</math> in simplest form?</p> <p>(1) <math>-4x^2y^2z</math>                      (3) <math>9x^6y^4z</math>  (2) <math>-4x^2yz</math>                        (4) <math>4x^2yz</math></p>	<p>12. The quotient of two negative numbers always has to be</p> <p>(3) Negative                      (3) Zero  (2) Positive                        (4) A Fraction</p>
<p>8. Add <math>3\frac{1}{5} + 2\frac{3}{8}</math></p> <p>(1) <math>\frac{33}{40}</math>                              (3) <math>\frac{223}{40}</math>  (2) <math>-\frac{33}{40}</math>                              (4) <math>5\frac{4}{13}</math></p>	<p>13. If a machine that prints coffee mugs prints 150 mugs in 2 hours, how many hours will it take to print designs on 900 mugs?</p> <p>(3) 12                                  (3) 67,500  (4) 75                                  (4) 12</p>
<p>9. What is the slope of the line that passes through the points (4,7) and (-3,2)?</p> <p>(1) <math>\frac{5}{7}</math>                                      (3) <math>\frac{7}{5}</math>  (2) <math>-\frac{5}{7}</math>                                    (4) <math>-\frac{7}{5}</math></p>	<p>14. Which verbal expression is represented by <math>5x + 6</math>?</p> <p>(5) 6 more than 5 times a number  (6) The difference of 6 times a number and 5  (7) The product of 5x and 6  (8) 5 times a number decreased by 5</p>
<p>10. The set of counting numbers is best represented by</p> <p>(5) <math>\{1, 2, 3, 4, \dots\}</math>  (6) <math>\{0, 1, 2, 3, 4, \dots\}</math>  (7) <math>\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}</math>  (4) <math>\{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}</math></p>	<p>15. Which relation is a function?</p> <p>(5) <math>\{(1, 5), (2, 6), (2,9), (4, 7)\}</math>  (6) <math>\{(3,8), (2, 1), (-3, 6), (3, 4)\}</math>  (7) <math>\{(-1, 6), (5, 3), (2, 5), (-1, 7)\}</math>  (8) <math>\{(-1, 2), (0, 5), (5, 0), (2, -1)\}</math></p>
<p>11. Which shape is a rectangle?</p> <p>(2) Rhombus                      (3) Trapezoid  (2) Square                        (4) Parallelogram</p>	

## Part II

Answer all questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only one credit.

16. A farmer wants to fence in a triangular garden. He knows the length of 2 sides of the garden are 25 feet and 65 feet as shown in the diagram below.



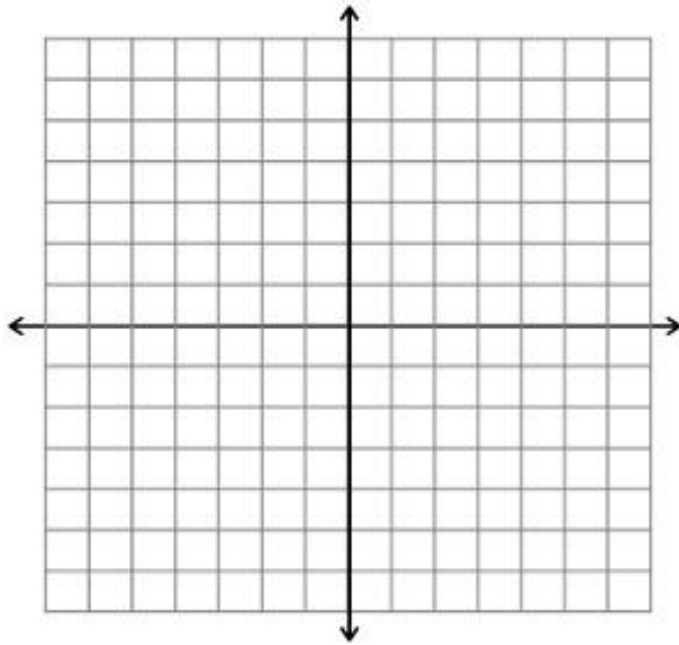
- a. Find the length of the third side of the garden.
- b. How many feet of fencing does the farmer need to fence in the entire garden?
- 
17. Last week gas sold for \$3.87 per gallon and this week it is selling for \$4.05 per gallon. What is the percent of increase in the gallon of gas from last week to this week to the nearest percent?

### Part III

Answer all questions in this part. Each correct answer will receive 3 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only one credit.

18. Quadrilateral ABCD has vertices A (-3,3); B (2,3); C (4,-2); D (-5,-2).

a) On the accompanying graph construct and label the above quadrilateral ABCD.



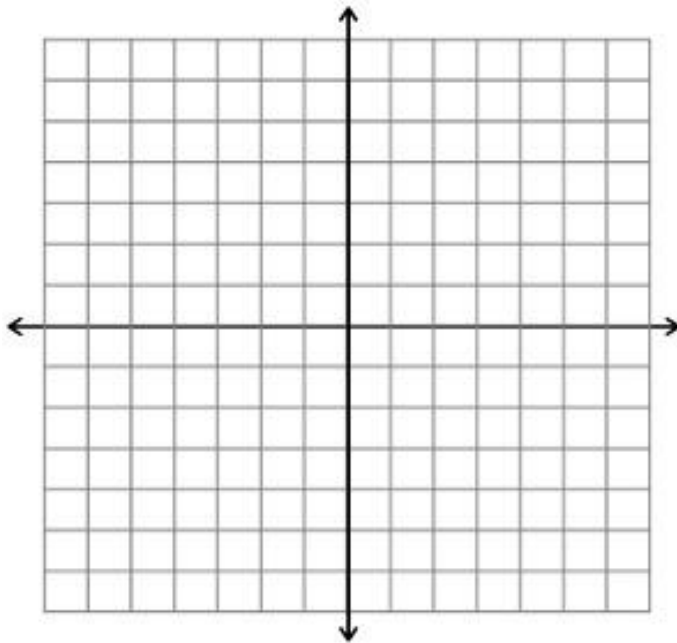
b) Find the area of quadrilateral ABCD.

### Part IV

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only one credit.

19. Graph and label the following equation on the set of axes below

$$3y - 2x = -12$$



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20. Determine the area of the shaded region if the perimeter of the square is 24 inches; round your answer to the nearest tenth.

