Name: _____

Honors Math Summer Work - Rising 8th Grade (Summer of 2025)

Dear Rising 8th Grade Honors Math Students,

Attached you will find your Summer Honors Math work. The Summer Work for Honors Math is designed to help you keep your skills sharp over the summer so that you are ready to go in September!

These worksheets are due on the first day of school in September.

There are 7 Parts to the Summer Worksheets.

Part 1 consists of 16 Pre-Algebra problems (Pages 1 and 2

- Exponents, Negative Exponents, Zero Exponent
- Perfect Squares & Square Roots
- Perfect Cubes & Cube Roots
- Scientific Notation vs. Standard Form
- Classifying the Real Numbers
- Comparing & Ordering Numbers (written in various forms)
- Order of Operations
- Evaluating Expressions
- Properties

Part 2 consists of 15 Pre-Algebra problems (Pages 3 and 4)

- Translating Expressions
- Simplifying Expressions (Distribute and/or Combine Like Terms)
- Factoring Expressions (Finding the Greatest Common Factor)
- Solving Two-Step & Multi-Step Equations
- Equations with Special Solutions
- Translating Equations
- Equation Word Problems
- Solving Two-Step & Multi-Step Inequalities
- Graphing Inequalities
- Translating Inequalities
- Inequality Word Problems

Part 3 consists of 15 Pre-Algebra problems (Pages 5 and 6)

- *Multiplying Monomials (Product Rule)
- *Dividing Monomials (Quotient Rule)
- *Powers of Monomials (Power Rule)
- Multiplying & Dividing Numbers in Scientific Notation
- Adding & Subtracting Numbers in Scientific Notation
- Applications with Scientific Notation

*Includes expressions with negative exponents

Part 4 consists of 15 Pre-Algebra problems (Pages 7 and 8)

- Ratios & Rates
- Solving Proportions
- Proportion Word Problems
- Scale Drawings & Models
- Similar Figures
- Indirect Measurement
- Percent Proportion
- Discount, Mark-up, Sales Tax, and Tip Problems
- Percent Increase and Percent Decrease
- Simple Interest

Part 5 consists of 16 Pre-Algebra problems (Pages 9 and 10)

- Relations vs. Functions
- Domain and Range
- Slope (Given a Graph)
- Slope (Given Two Ordered Pairs)
- Slope Applications
- Slope-Intercept Form
- Slope-Intercept Form Applications
- Standard Form
- Linear vs. Nonlinear Functions
- Proportional Relationships (Direct Variation)

Part 6 consists of 12 Pre-Algebra problems (Pages 11 and 12)

- Writing a System of Equations given a Graph
- Solving Systems of Equations Graphically
- Solving Systems of Equations Algebraically (Substitution/Elimination)
- Special Cases: No Solution/Infinite Solution
- Systems of Equations Applications

Part 7 consists of 16 Pre-Algebra problems (Pages 13 and 14)

- Angle Relationships (Vertical, Adjacent, Complementary, Supplementary)
- Parallel Lines Cut by a Transversal
- Pythagorean Theorem & Converse
- Pythagorean Theorem Word Problems
- Sum of the Interior Angles of a Polygon
- Properties of Quadrilaterals/Classifying Quadrilaterals
- Congruent Polygons

Have fun with your friends and family this summer, and take time to relax! Thanks for an awesome year! Looking forward to an awesome year in 8th grade Honors Math.

Enjoy your summer,

Mrs De Cain

Pre-Algebra Review

1

Name: _____

Date: _____ **Per:** _____

1. A rectangle measures $15\frac{1}{4}$ feet by $8\frac{11}{15}$ feet. If the length and width are extended by $1\frac{2}{3}$ feet each, find the area of the new rectangle.

A. $184\frac{5}{12}$ ft^2

B. $175\frac{14}{15}$ ft^2

C. $172\frac{8}{9}$ ft^2

D. $180\frac{3}{4}$ ft^2

2. Which expression is equivalent to the expression below?

$$12^{-5} \cdot (-8)^{12} \cdot 7^0$$

A. $\frac{(-8)^{12} \cdot 1}{12^5}$

B. $\frac{1}{8^{12} \cdot 12^5}$

C. $\frac{(-8)^{12} \cdot 0}{12^5}$

D. $-(12)^5 \cdot (-8)^{12} \cdot 1$

3. Write an exponent in the box below that would make the statement true.

$0.000000000000782 = 7.82 \times 10^{\square}$

4. Which numbers are perfect squares? Check all that apply.

☐ 40	☐ 289
☐ 8	☐ 92
☐ 121	☐ 216

5. Evaluate the expression below. Write your answer in the box.

$$\sqrt[3]{729} + \sqrt{64} = \square$$

6. Which number lies between the same two consecutive integers as $\sqrt{58}$?

A. $\sqrt{42}$

B. $\sqrt{48}$

C. $\sqrt{65}$

D. $\sqrt{50}$

7. Which number is greater than 4^{-2} ?

A. 3^{-3}

B. 6.3×10^{-3}

C. 6%

D. $\frac{2}{25}$

8. Which list of numbers are correctly ordered from least to greatest?

A. $\left\{\frac{1}{40}, 1 \times 10^{-3}, 3^{-2}, 1\%\right\}$

B. $\left\{1 \times 10^{-3}, \frac{1}{40}, 1\%, 3^{-2}\right\}$

C. $\left\{1 \times 10^{-3}, 1\%, \frac{1}{40}, 3^{-2}\right\}$

D. $\left\{3^{-2}, \frac{1}{40}, 1\%, 1 \times 10^{-3}\right\}$

9. Which of the following list contains rational numbers only?

A. $\left\{1.7295, \sqrt{200}, \frac{2}{5}, -\sqrt{9}\right\}$

B. $\left\{\sqrt{196}, \frac{40}{8}, -1\frac{4}{13}, -\sqrt{30}\right\}$

C. $\left\{-\frac{12}{5}, \sqrt[3]{64}, \sqrt{10}, 16\%\right\}$

D. $\left\{-\sqrt{144}, 0.\overline{92}, \frac{17}{11}, \sqrt{\frac{4}{49}}\right\}$

10. Which value is not an integer?

A. 20%

B. $-\sqrt{81}$

C. $\frac{42}{6}$

D. $.08 \times 10^2$

11. Which statement is true?

A. An integer is never a whole number.

B. A rational number is always a real number.

C. No number is both an integer and a natural number.

D. No number is both an irrational number and a real number.

12. Simplify the expression below. Write your answer in the box.

$$\frac{-|-14|+2^6}{26-(3+5^2)}$$

13. Evaluate the expression below if $x = \frac{15}{8}$ and $y = -3$.

$$\frac{3}{8}y^2 - \frac{4}{3}x$$

A. $-\frac{47}{8}$

B. $\frac{7}{8}$

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

D. $\frac{21}{16}$

14. Which expression could be placed in the box to show an example of the commutative property?

$$\frac{1}{2}(m+n) - p = \boxed{?}$$

A. $\frac{1}{2}m(n-p)$

B. $(m+n)\frac{1}{2} - p$

C. $p - \frac{1}{2}(m+n)$

D. $\frac{1}{2}m + \frac{1}{2}n - \frac{1}{2}p$

15. Write a value in each box to illustrate the inverse property of addition.

$$\frac{3}{7} + \square = \square$$

16. Which statement can not be justified by the properties of real numbers?

A. $(x+y)^2 = x^2 + y^2$

B. $(x-y)^2 z = z(x-y)^2$

C. $z(x^2 + y^2) = x^2 z + y^2 z$

D. $(x-y) \cdot \frac{1}{x-y} = 1$

Pre-Algebra Review

2

Name: _____

Date: _____ **Per:** _____

1. Which expression does not simplify to $-8x + 27$?

A. $-7(2x-5)+6x-8$

B. $3x-17-11x+44$

C. $21-\frac{2}{3}(15x-9)+2x$

D. $33-(7-8x)+1$

2. Choose one term from Column 1 and one term from Column 2 to create a prime expression. Write your answers in the box.

[ ] + [ ]

Column 1	Column 2
$8x$	42
$9x$	30
$6x$	28

3. Which expression represents the factored form of the simplified expression below?

$$-36-3m+15m-4$$

A. $2(9m-16)$

B. $2(9m-20)$

C. $4(3m-10)$

D. $4(3m-8)$

4. Solve the equation below. Write your answer in the box.

$$\frac{2}{3}a-1=-11$$

$a =$ [ ]

5. Find the value of k.

$$7k-12=13k-42$$

A. $k = -5$

B. $k = 5$

C. $k = -9$

D. $k = 9$

6. Find the value of w.

$$3-(5w+14)=-\frac{3}{4}(12w+4)$$

A. $w = -2$

B. $w = 2$

C. $w = -7$

D. $w = 7$

7. Which equation has an infinite solution?

A. $2(x + 10) = 4(5 - x) + 6x$

B. $3(4x - 3) = 6(2x - 3)$

C. $-18 - (3x - 2) = 3(x - 5) - 1$

D. $-2(3x + 5) = 2(3x - 5)$

8. At the beginning of a musical, four-fifths of the seats in the theater were filled. During intermission, 18 people left. If there were 286 people left, how many seats are in the theater?

A. 335

B. 350

C. 380

D. 400

9. Which equation results in a solution of 8?

A. Eighteen less than twice a number is two.

B. Fifteen subtracted from the quotient of a number and four is seventeen.

C. The sum of a number and seven, divided by five, is three.

D. The difference between one and the product of a number and three is twenty.

10. In one minute, Evan can do nine less than four times the number of push-ups that Lucy can do. If they did 61 push-ups in all, how many more push-ups did Evan do than Lucy?

A. 26

B. 28

C. 31

D. 33

11. To get an A in Science, Sally must get at least a 96 on her next test. Which inequality shows the grade, g, Sally needs?

A. $g \geq 96$

B. $g \leq 96$

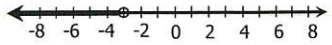
C. $g > 96$

D. $g < 96$

12. Which graph shows the solutions to the inequality below?

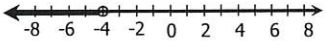
$$-5(2x+1) < 35$$

A.



B.

C.



D.

13. Find the solution to the inequality below:

$$\frac{2}{3}(12x-9) \leq 5x-48$$

A. $x \geq -14$

B. $x \leq -14$

C. $x \geq -18$

D. $x \leq -18$

14. Which values are solutions to the inequality below? Check all that apply.

$$-7x+30 > -15-2x$$

☐ 5	☐ 9	☐ $\frac{60}{7}$
☐ $\sqrt[3]{64}$	☐ $\lvert -11 \rvert$	☐ $\sqrt{94}$

15. Taylor stopped at the gas station to get gas and a car wash. The car wash costs $5 and gas costs $2.50 per gallon. If she can spend at most $35, how many gallons of gas, x, can she afford?

A. $x \geq 12$

B. $x \leq 12$

C. $x \geq 16$

D. $x \leq 16$

Pre-Algebra Review

3

Name: _____

Date: _____ **Per:** _____

1. Simplify the expression below.

$$7p^2 \cdot 4p^6$$

A. $28p^8$

B. $11p^8$

C. $28p^{12}$

D. $11p^{12}$

2. Simplify the expression below.

$$\frac{-20w^{12}}{4w^3}$$

A. $-16w^4$

B. $-5w^4$

C. $\frac{w^9}{5}$

D. $-5w^9$

3. Which expression simplifies to $16a^{12}b^4$?

A. $-8a^2b \cdot -2a^6b^4$

B. $\frac{32a^{24}b^8}{2a^2b^2}$

C. $(-4a^6b^2)^2$

D. $(4a^3b)^4$

4. Write the values in the boxes that make the statement true.

$$\frac{5}{3}xz^{\square} \cdot \square x^{\square} y^{\square} z^2 = 15x^7z^{10}$$

5. Simplify the expression below.

$$(3k^{-2})^3$$

A. $27k$

B. $\frac{27}{k^6}$

C. $\frac{9}{k^6}$

D. $9k$

6. Simplify the expression below.

$$\frac{c^{-8}d^5}{c^{-6}d^5}$$

A. $\frac{1}{c^{14}}$

B. $\frac{1}{c^2}$

C. $\frac{d}{c^2}$

D. $\frac{d}{c^{14}}$

7. Write a value in the box that makes the statement true.

$$w^{\square} \cdot w^{-2} = \frac{1}{w^8}$$

8. Which expressions are equivalent to $\frac{18a^{14}}{b^4}$? Check all that apply.

☐ $\frac{54a^{16}b^{-1}}{3a^2b^3}$	☐ $18(a^{10}b^{-1})^4$
☐ $(9a^7b^{-2})^2$	☐ $24a^2b^{-2} \cdot \frac{3}{4}a^{12}b^{-2}$
☐ $3a^7b \cdot 6a^2b^{-4}$	☐ $\frac{20a^{19}b^{-5}}{-2a^{-1}b^1}$

9. Find the product of 9×10^{12} and 4×10^{4}.

A. 3.6×10^{15}

B. 3.6×10^{17}

C. 3.6×10^{46}

D. 3.6×10^{48}

10. Evaluate the expression below.

$$(7.5\times10^{9})+(4.3\times10^{9})$$

A. 1.18×10^{10}

B. 1.18×10^{8}

C. 1.18×10^{19}

D. 1.18×10^{17}

11. Evaluate the expression below.

$$(1.1\times10^{-6})-(2.9\times10^{-7})$$

A. -1.8×10^{-13}

B. 1.8×10^{1}

C. 8.1×10^{-6}

D. 8.1×10^{-7}

12. Evaluate the expression below.

$$\frac{6.3\times10^{15}}{(7.15\times10^{5})+(5\times10^{3})}$$

A. 8.75×10^{7}

B. 8.75×10^{-1}

C. 8.75×10^{9}

D. 8.75×10^{2}

13. A factory manufactures 9×10^{5} packs of gum each month. They send these out to 16 different distribution centers. If each distribution center gets the same number of packs, how many are sent to each center?

A. 5.625×10^{4}

B. 5.625×10^{6}

C. 1.44×10^{4}

D. 1.44×10^{6}

14. The population of five cities in Pennsylvania is shown in the table below. How many total people live in the two most populated cities? Give your answer in scientific notation.

Allentown	**1.2×10^{5}**
Philadelphia	**1.6×10^{6}**
Erie	**9.9×10^{4}**
Pittsburgh	**3.1×10^{5}**
Scranton	**7.5×10^{4}**

15. Earth's mass is approximately 6×10^{24} kilograms. Find the mass of Neptune if it is 17 times greater than the mass of Earth.

A. 1.1×10^{27}

B. 1.1×10^{25}

C. 1.02×10^{22}

D. 1.02×10^{26}

Pre-Algebra Review

4

Name: _____

Date: _____ **Per:** _____

1. A snowstorm brought 22 inches of snow to Buffalo in 12 hours, then 2 feet of snow to Rochester in 14 hours. Syracuse got 4 inches less snow than Buffalo in 8 hours. Which city had a heavier snowfall rate?

A. Buffalo
B. Rochester
C. Syracuse
D. It was the same for all three cities.

2. Solve the proportion below. Write your answer in the box.

$$\frac{3.5}{20} = \frac{9.1}{x}$$

$x =$

3. Alana drove 1,400 miles from Detroit to Miami. If her car averages 28 miles per gallon and the capacity of her gas tank is 24 gallons, how many times did she have to fill up her gas tank along the way, assuming she started with an empty tank?

A. 1 time
B. 2 times
C. 3 times
D. 4 times

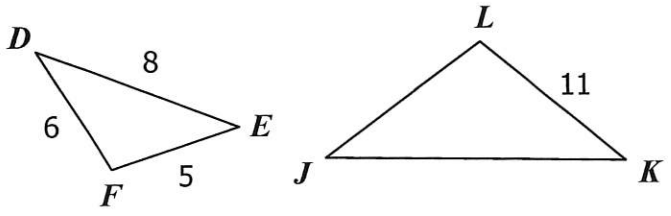
4. The scale on a map reads $\frac{3}{4}$ inch = 50 miles. If the actual distance between the two cities is 325 miles, find the distance between the cities on the map.

A. $4\frac{7}{8}$ inches
B. $4\frac{13}{16}$ inches
C. $4\frac{1}{2}$ inches
D. $4\frac{3}{4}$ inches

5. A company is manufacturing models of the Eiffel Tower to sell in gift shops. If the model needs to fit in a 1-foot tall box, and the actual height of the tower is 984 feet, which scale is best?

A. 1 inch = 50 feet
B. 4 inches = 250 feet
C. 3 inches = 200 feet
D. 2 inches = 175 feet

6. If $\Delta DEF \sim \Delta JKL$, find JK.



A. 14.7
B. 15.5
C. 17.6
D. 18.2

7. Elijah is 5'9" tall and casts a 4-foot shadow. He is standing near a tree that casts a 24-foot shadow. How tall is the tree?

A. 30.2 feet
B. 32.8 feet
C. 34.5 feet
D. 36.1 feet

8. Jordan's fish tank was only 62.5% full so he added some water to it so it got to 80% full. If the tank now has 40 gallons of water in it, how many gallons did he add?

A. 8.25 gallons
B. 8.5 gallons
C. 8.75 gallons
D. 9 gallons

9. Ella bought a $379 tablet for 15% off. The next day, she saw that it was marked down an additional 20% off the sale price. How much more money would she have saved by waiting a day to purchase the tablet?

A. $18.95
B. $24.52
C. $48.16
D. $64.43

10. Mr. Hillman is buying boxes of colored pencils for his classroom. They regularly cost $1.80 each but are on sale for 30% off. If sales tax is 6% and he has a $40 budget, how many boxes can be buy?

A. 27 boxes
B. 28 boxes
C. 29 boxes
D. 30 boxes

11. The bill for a group of eight people at a restaurant came to $196. Because they are a large party, the restaurant also adds an 18% tip on top of this. If they decide to equally split the bill, including the tip, how much will each person pay?

A. $28.91
B. $29.35
C. $30.77
D. $31.08

12. When Martin started his job in 2007, his salary was $40,000. In 2016, his salary was $72,000. What is the percent increase of his salary from 2007 to 2016? Write your answer in the box.

13. The table below shows the total rainfall in 2015 and the total rainfall in 2016 for four different cities. Which city had the greatest percent decrease in rainfall from 2015 to 2016?

City	Total 2015 Rainfall (in)	Total 2016 Rainfall (in)
Greystone	53.2	49.7
Sierra	45.8	42.9
Lakeville	43.5	41.2
Ashland	50.4	46.8

A. Greystone
B. Sierra
C. Lakeville
D. Ashland

14. Stacy put $650 in a bank account that earns 7% simple interest. How much total will she have in the account after 20 years?

A. $910
B. $1,560
C. $1,820
D. $1,995

15. Ian took out a 60-month loan from the bank to purchase a $27,000 car. If the simple interest rate is 4.5%, how much would he save if he pays the car off in three years instead of the entire length of the loan?

A. $2,190
B. $2,430
C. $2,550
D. $2,620

Pre-Algebra Review

5

Name: _____

Date: _____ **Per:** _____

1. Which relation represents a function?

A.

x	1	1	1	1
y	-2	0	2	4

B.

x	0	2	4	2
y	-4	-3	-2	-1

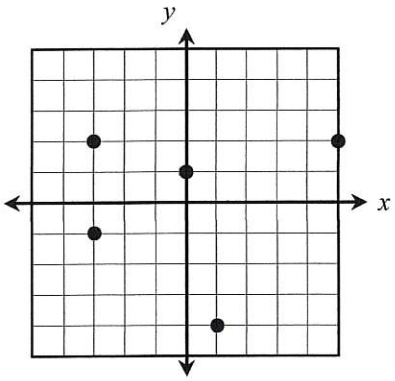
C.

x	-5	-4	-3	-5
y	3	3	3	3

D.

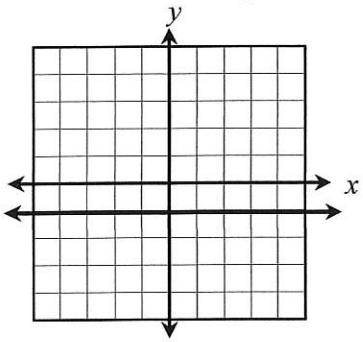
x	-3	-1	0	4
y	-3	-1	0	4

2. Which value is not in the range of the relation shown below?



A. -3
B. -1
C. 1
D. 2

3. What is the slope of the line on the graph?



A. -1
B. 1
C. 0
D. undefined

4. Find the slope of the line that passes through the points (2, -1) and (-2, 9). Write your answer as a fraction in simplest form.

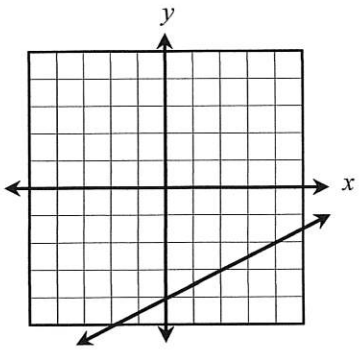
5. Find the slope of the line that passes through the points (-6, 5) and (-6, 8).

A. -1/4
B. 1/4
C. 0
D. undefined

6. At 11:59 p.m. on December 31st, the Times Square Ball in New York City was 725 feet above ground. One minute later, it was 584 feet above ground. Which of the following gives the rate of change of the ball in feet per second?

A. 2.35 ft/s
B. -2.35 ft/s
C. 2.82 ft/s
D. -2.82 ft/s

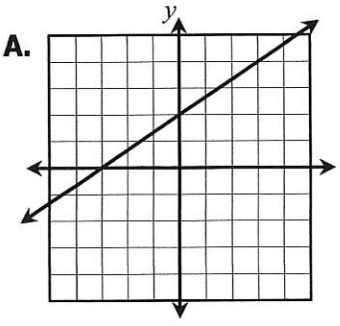
7. Which equation best represents the line shown on the graph?



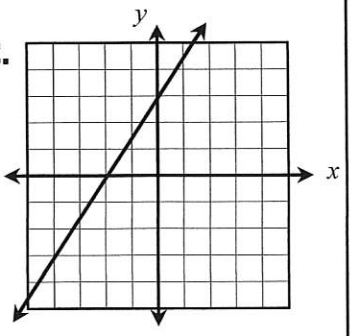
A. $y = -4 - \frac{1}{2}x$
B. $y = -4x + 2$
C. $y = \frac{1}{2}x - 4$
D. $y = 2x - 4$

8. Which graph best represents the equation $4x + 6y = 12$?

A.



C.



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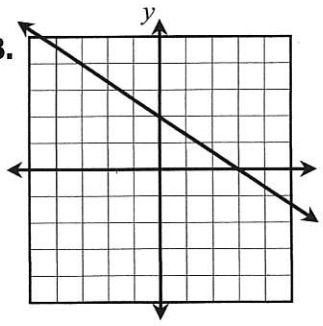
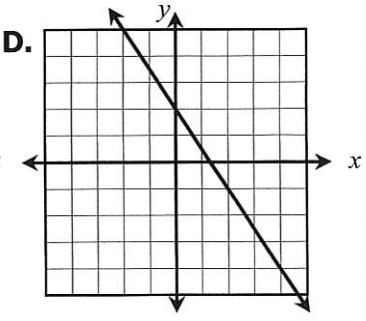
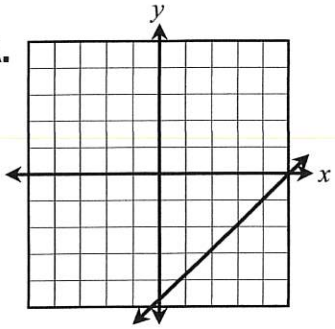


D.

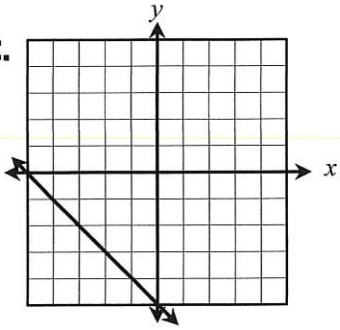


9. Which graph best represents the equation $x - y = -5$?

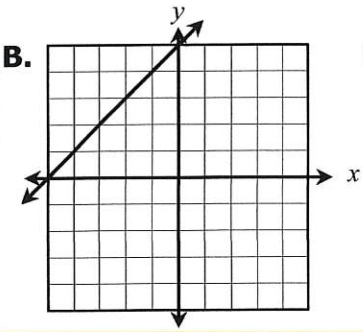
A.



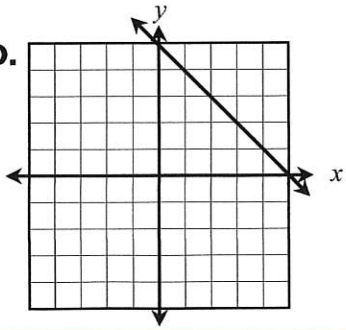
C.



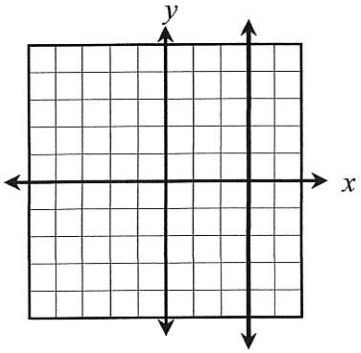
B.



D.



10. Which equation best represents the line shown on the graph?



A. $y = 3x$

B. $y = 3$

C. $x = 3$

D. $x = 1$

Use for questions 11-13: Aiden weighed 7.2 pounds at birth. In his first year, he gained 1.5 pounds per month.

11. If y represents Aiden's weight at x months, write an equation in slope-intercept form that gives Aiden's weight each month.

12. Which of the following represents the dependent variable?

A. weight

B. months

C. 7.2

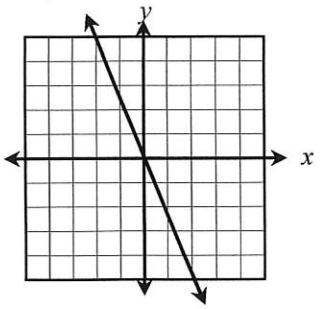
D. 1.5

13. How much did Aiden weigh at 9 months old?

14. Which of the following does not show a direct variation relationship?

A. $4x - 3y = 0$

C.



B.

x	y
-1	-2
0	0
1	-2
2	-4

D.

Download Speeds	
Seconds	**Megabits**
5	39
25	195
40	312
60	468

15. The amount of vinegar, v, added to water to create a cleaning solution varies directly to the amount of water, w. For 8 cups of water, ½ cup of vinegar is added. Which of the following equations represents this relationship?

A. $v = \frac{1}{16}w$

B. $v = \frac{1}{4}w$

C. $v = 16w$

D. $v = 4w$

16. Which of the following represents a linear function?

A. $x^2 - 2y^2 = 6$

C. $xy = -4$

B.

x	y
0	0
2	1
4	2
6	8

D.

x	y
-4	5
1	2
6	-1
11	-4

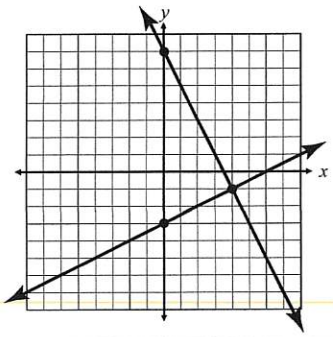
Pre-Algebra Review

6

Name: _____

Date: _____ **Per:** _____

Use the graph to the right for questions 1-2:



1. Which two equations represent this system?

☐ $y = 2x - 3$	☐ $y = -2x + 7$
☐ $y = -\frac{1}{2}x + 7$	☐ $x - 2y = -6$
☐ $x - 2y = 6$	☐ $2x - y = 7$

2. What is the solution to the system? Write your answer in the box.

(☐ , ☐)

3. Three systems of equations are given below. Write the letter of the type of solution that each system has in each box below the system.

$\begin{cases} 3x + 3y = 15 \\ y = -x + 5 \end{cases}$ ☐

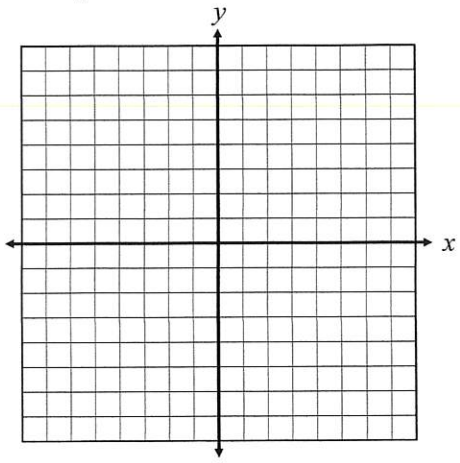
$\begin{cases} 3x - y = 5 \\ x - 3y = 15 \end{cases}$ ☐

$\begin{cases} 3x - y = 9 \\ y = 3x + 9 \end{cases}$ ☐

Types of Solutions:

A – One Solution
B – No Solution
C – Infinite Solutions

4. Use the graph below to determine which system of equations would have a solution in the second quadrant.



A. $\begin{cases} y = x - 7 \\ y = -x + 3 \end{cases}$

C. $\begin{cases} y = -x + 2 \\ 4x - y = -7 \end{cases}$

B. $\begin{cases} y = x - 1 \\ y = -\frac{1}{4}x - 6 \end{cases}$

D. $\begin{cases} x + 2y = 14 \\ y = \frac{3}{2}x - 5 \end{cases}$

5. Solve the system of equations algebraically. Write your answer in the box.

$\begin{cases} y = x + 1 \\ y = -4x - 14 \end{cases}$

(☐ , ☐)

6. Find the value of x in the solution to the system of equations shown below.

$\begin{cases} 2x - 5y = 34 \\ y = 3x - 25 \end{cases}$

A. -4
B. 7
C. -7
D. 3

7. Find the solution to the system of equations.

$$\begin{cases} x - 2y = -20 \\ x - 5y = -47 \end{cases}$$

A. (-2, 9)
B. (2, -9)
C. (9, -2)
D. (-9, 2)

8. Find the solution to the system of equations.

$$\begin{cases} 3x + y = -17 \\ 4x - 9y = -2 \end{cases}$$

A. (2, -5)
B. (-5, 2)
C. (-2, -5)
D. (-5, -2)

9. Find the solution to the system of equations.

$$\begin{cases} 5x - y = -2 \\ y = -5x - 8 \end{cases}$$

A. (-3, -1)
B. (-1, -3)
C. No Solution
D. Infinite Solutions

10. Find the solution to the system of equations.

$$\begin{cases} y = 2x - 8 \\ 6x - 3y = 24 \end{cases}$$

A. (0, 8)
B. (8, 0)
C. No Solution
D. Infinite Solutions

11. A certain airplane offers two types of seats, first class and economy. There are 209 total seats on the airplane. If the difference between the number of economy and first class seats is 153, find the number of economy seats.

A. 28
B. 45
C. 164
D. 181

12. It costs $31.25 for one box of candy and four large bags of popcorn at the movie theater. For three boxes of candy and five large bags of popcorn, it costs $46.50. How much does a large bag of popcorn cost?

A. $4.25
B. $5.50
C. $6.75
D. $7.25

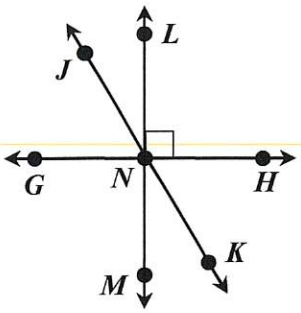
Pre-Algebra Review

7

Name: _____

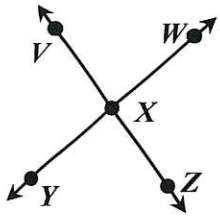
Date: _____ **Per:** _____

1. Which of the following describes $\angle JNL$ and $\angle MNK$? Check all that apply.

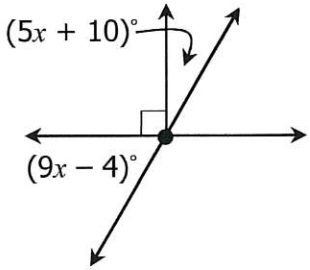


- ☐ Vertical
- ☐ Adjacent
- ☐ Complementary
- ☐ Supplementary
- ☐ Congruent

2. If $m\angle VXY = 94^\circ$, find the measure of $\angle YXZ$. Write your answer in the box.

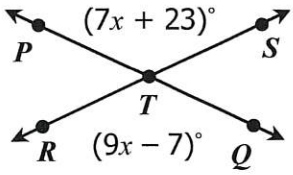


3. Find the value of x.



A. 3.5
B. 6
C. 8
D. 12.5

4. Find $m\angle STQ$.

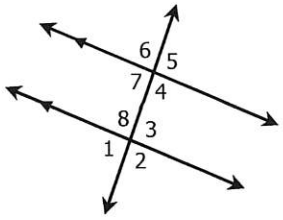


A. 52°
B. 64°
C. 116°
D. 128°

5. If $\angle A$ is complementary to $\angle B$, $\angle B$ is supplementary to $\angle C$, and $m\angle A = 59^\circ$, find $m\angle C$.

A. 31°
B. 109°
C. 121°
D. 149°

6. Given the diagram below, name a pair of corresponding angles. Write your answers in the boxes.

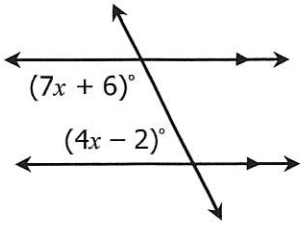


∠ and ∠

7. Using the diagram above, if $m\angle 4 = 82^\circ$, which of the following describes the relationship between angles 4 and 8, and gives the measure of $\angle 8$?

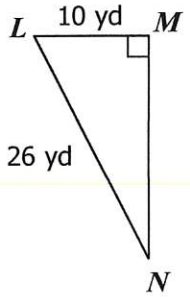
A. Alternate Interior Angles; $m\angle 8 = 82^\circ$
B. Alternate Interior Angles; $m\angle 8 = 98^\circ$
C. Consecutive Interior Angles; $m\angle 8 = 82^\circ$
D. Consecutive Interior Angles; $m\angle 8 = 98^\circ$

8. Find the value of x. Write your answer in the box.



x =

9. What is the length of $\overline{MN}$?



A. 16 yd
B. 22 yd
C. 24 yd
D. 36 yd

10. Starting from a tree, Cole and Logan run 24 feet south. Then, Cole runs 18 feet east while Logan runs 45 feet west, then they both stop. How many feet closer to the tree is Cole than Logan?

A. 18 ft
B. 21 ft
C. 27 ft
D. 30 ft

11. A fireman has a 28-foot ladder. In order to reach a point 25 feet up a building, about how far away from the building should he place the bottom of the ladder?

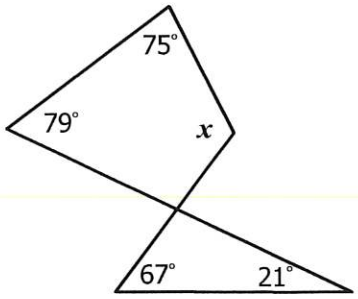
A. 10.9 ft
B. 11.2 ft
C. 11.8 ft
D. 12.6 ft

12. Given the side lengths of three triangles below, determine which statement is true.

Triangle A	20 cm, 21 cm, 29 cm
Triangle B	12 cm, 18 cm, 30 cm
Triangle C	9 cm, 40 cm, 41 cm

A. Triangles A and B are right triangles.
B. Triangles A and C are right triangles.
C. Triangles B and C are right triangles.
D. Triangles A, B, and C are right triangles.

13. Find $m\angle x$.



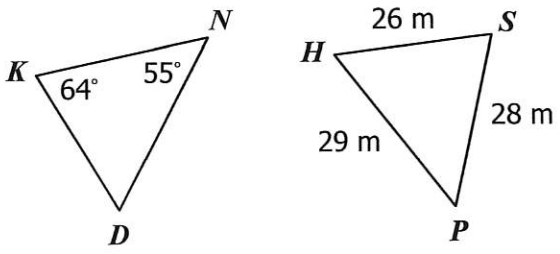
A. 114°
B. 118°
C. 121°
D. 123°

14. Which of the following statements describe a rhombus? Check all that apply.

- ☐ It has four congruent angles.
- ☐ It has four congruent sides.
- ☐ It is always a square.
- ☐ It is sometimes a quadrilateral.
- ☐ It is always a parallelogram.
- ☐ It is sometimes a rectangle.

15. If a polygon has 14 sides, find the sum of the measures of its interior angles. Write your answer in the box.

16. If $\Delta KND \cong \Delta SPH$, which correctly gives the measure of $\angle H$ and the length of $\overline{KN}$?



A. $m\angle H = 64°$; $KN = 29$ m
B. $m\angle H = 61°$; $KN = 29$ m
C. $m\angle H = 64°$; $KN = 28$ m
D. $m\angle H = 61°$; $KN = 28$ m