

Directions: Show <u>ALL</u> work to receive full credit. All answers should be put in simplest form. Circle your final answers.

Academic Integrity: All work should be completed independently and without the assistance of unapproved resources. Any work violating academic integrity will be subject to a "0" and any additional consequences as outlined in the Knox Academic Integrity Policy attached to this assignment.

Due Date: Your work is due the first day of your Geometry class. All late work will be subjected to a grade reduction or penalty as outlined in the course syllabus and copied below:

All major assignments not submitted on the due date will face a 10% deduction of max points per day for up to five (5) days and up to a 50% deduction. Summer Assignments for AP Classes that are not submitted on time will result in the student being dropped from the course.

If you have any questions or concerns regarding this assignment, please contact the Dean of Academics, Mrs. Pergola, at <u>dpergola@knoxschool.org</u>.

NAME:	

Directions: Show <u>ALL</u> work to receive full credit. All answers should be put in simplest form. Circle your final answers.

1. Evaluate the algebraic expressions when x = - 3 and y = 2

a.
$$\frac{2x-y}{x+y}$$
 b. $\frac{2y^2-2x}{x-2y}$ c. $\frac{x^3-3y}{y^3+3}$

2. Solve the equations: a. 2(x - 3) - 3(x + 1) = -8b. $\frac{m+9}{5} = \frac{m-1}{3}$

c.
$$\frac{|8b-4|}{5} = 4$$
 d. $7(p+3) + 9 = 5(p-2) - 3p$

e.
$$-4(2x-5) = -8x-1$$

f. $-9a = 3(2-3a) - 6$

3. Solve the inequalities and graph on a number line:

a. 4x – 7 < 8x + 5	b.	$-3x+1 \leq 16$	c. $-14 < 3x - 5 < 1$
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4. Perform the following operations. Write your answers in simplest form.

a.
$$(4x + 9)(7x - 1)$$

b. $(x - 5)(x^2 - 4x + 8)$

c.
$$\frac{15x^3 - 10x^2 - 20x}{5x}$$
 d. $(x^2 + 5x - 6) - 2(3x^2 - x + 8)$

5. Factor the following completely: a. $x^2 + 7x + 12$ b. $4x^4 - 4$ c. $6x^2 - 3x - 84$ 6. Determine if (-4) is a solution to:

a. $2x^2 + 7x - 4 = 0$ b. $-2x^2 - 5x = -32$

7. Solve for x:

a.
$$x^2 - 9x = 0$$
 b. $x^2 - 9x + 14 = 0$ c. $2x^2 + 5x - 12 = 0$

8. Solve for x:

a.
$$\frac{x-1}{3} = \frac{2x}{5}$$
 b. $\frac{x+7}{7} = -\frac{2}{x}$

9. Write the equation 2x + 3y = 6 in slope-intercept form. Identify the slope and y-intercept, and graph.



10. Graph the linear inequality y < -2x + 4.



11. Find the slope of the line passing through the points (3, 6) and (6, 8)

12. Write the equation for the line in question 11.

13. Write an equation and solve: A contractor charges a flat fee of \$80 plus \$52 per hour. For a job that is billed at \$340, how many hours did the contractor work?

14. Write an equation and solve: Pat's Limousine Service leases a car for \$325 per month. He makes an average of \$30 per customer and uses approximately \$4.00 in gas per trip. How many trips must he make to break even?

15. Solve the system of equations by substitution or addition method:

a. 2x + y = -2b. 2x + 3y = 65x + 3y = -82y = 5 - x

16. Simplify. Write the answer with positive exponents only: $(-4x^5y^{-2}z)^2$

17. The large rectangle has dimensions 8 feet x 14 feet. The inside square has a side length of 4 feet. Find the area of the shaded region:



 Find the surface area of a rectangular prism with dimensions of 8 feet x 5 feet x 7 feet.

19. If the radius of a circle is 5 inches, find the Circumference and the Area of the circle.