

To 8th Grade Geometry Math Summer Packet

1. Due the first day of school!
2. All problems must be done with all work shown.
3. You can do your work on these papers.
4. Do NOT erase anything that is written down!
5. You must be neat!
6. This assignment will be graded and is considered the 1st. Assignment of the school year.
7. Should you have any questions, please contact Mr. Santora, or Mrs. Santoiemmo at:

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Have a great summer!!!!

We are looking forward to a productive and fun math year!

Math Teachers

Name _____ Date _____

Expressions

For each formula, write the variable(s) and numerical coefficient(s).

	Variable(s)	Coefficient(s)
1. Circumference of a circle: $C = \pi d$	_____	_____
2. Area of a triangle: $A = \frac{1}{2}bh$	_____	_____

Write an algebraic expression for each phrase.

6. 3 less than four times a number f _____8. \$14 divided among y students _____

Identify each polynomial as a monomial, binomial, or trinomial.

10. $\sqrt{4x} + 5yz$ _____

12. $\frac{7c}{5}$ _____

13. $-3x + 5jk - 4pq$ _____

Use the Distributive Property to simplify each expression. Show your work.

EXAMPLE: $7cd + 11cd = cd(7 + 11)$
 $= cd \cdot 18$
 $= 18cd$

16. $4y + -3(y - 3) + -7z$

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Find the x -intercepts for each equation. Show your work.

38. $y = 3x^2 - 5x - 2$

 x -intercepts: _____

Use the discriminant to determine the number of real roots. Show your work.

40. $4x^2 + 12x = -9$

Number of real root(s): _____

43. $-5x + 3 = 2x^2$

Number of real root(s): _____

Factor each expression

45. $4x^2 - 12x + 9$ _____

47. $81 - 4x^2$ _____

50. $a^2 - 2ab + b^2$ _____

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Solve each problem. Show your work. Write your answer in simplest radical form.

REMEMBER: if $x^2 = n$, then $x = \pm\sqrt{n}$.

27. $3x^2 + 4 = 31$

28. $x^2 - 40 = 0$

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Use the greatest common factor (GCF) to factor each expression. Show your work.

30. $12a - 20ab$

32. $2x^2 - 8x^2 + 10x$

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Solve each problem by completing the square. Show your work.

35. $2m^2 + 6m = 5$

184-185

Before applying the formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, list the values of a , b , and c . Then use the quadratic formula to solve each problem.

36. $3x^2 + 2 = -5x$

$a = \underline{\hspace{1cm}} \quad b = \underline{\hspace{1cm}} \quad c = \underline{\hspace{1cm}}$

37. $2x^2 - 6x = -3$

$a = \underline{\hspace{1cm}} \quad b = \underline{\hspace{1cm}} \quad c = \underline{\hspace{1cm}}$

Solution: _____

Solution: _____

Name _____ Date _____

Write the vertex of each graph. Show your work.

REMEMBER: use the formula $x = \frac{-b}{2a}$ and substitute.

20. $y = x^2 - 4x - 5$

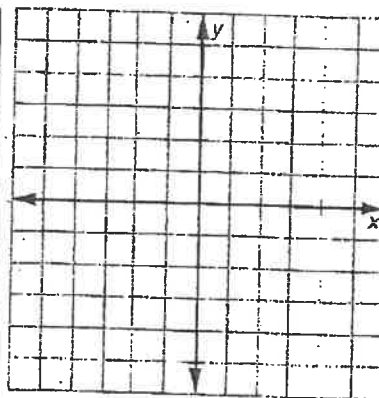
Vertex: _____

Use each equation to find the vertex and the line of symmetry. Then plot and label the vertex and the line of symmetry on the graph. Next, complete the table of values. Finally, plot the points and sketch the graph.

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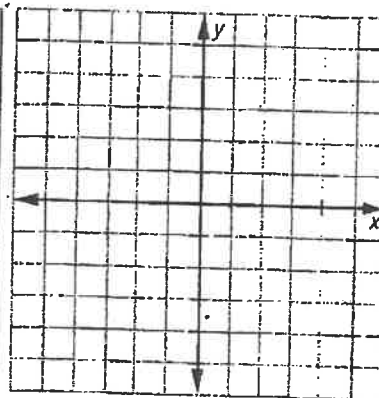
24. $y = -x^2 - 4x - 3$

x	y
1	-8
0	
-1	
-2	1
-3	
-4	
-5	



26. $y = \frac{-1}{2}x^2 + 3$

x	y
-4	
-2	
0	
2	
4	



Name _____ Date _____

Solving Quadratic Equations

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Is the equation a quadratic equation? Write *yes* or *no*.

1. $-3x + 7 = -28$ _____

4. $x^4 - 16 = 0$ _____

5. $x^2 - 4x = 19$ _____

Write each equation in standard form: $ax^2 + bx + c = 0$. Show your work.

7. $3x^2 - 5x = 7x + 5$

9. $6x^2 + 8 = 2(3 - x)$

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For each equation in the form $y = ax^2 + bx + c$, identify a , b , and c .

12. $y = -2x^2 + 5$

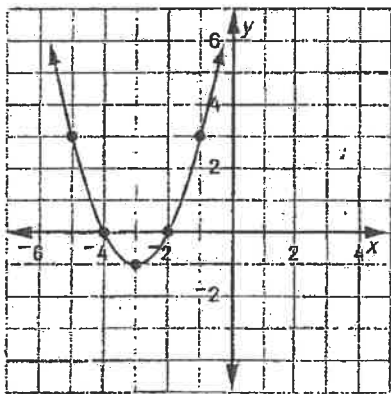
$a = \underline{\hspace{1cm}}$ $b = \underline{\hspace{1cm}}$ $c = \underline{\hspace{1cm}}$

Does the parabola open *upward* or *downward*? Circle the correct answer.**REMEMBER:** look at the coefficient of x^2 .

14. $y = -x^2 - 2x + 7$ upward downward

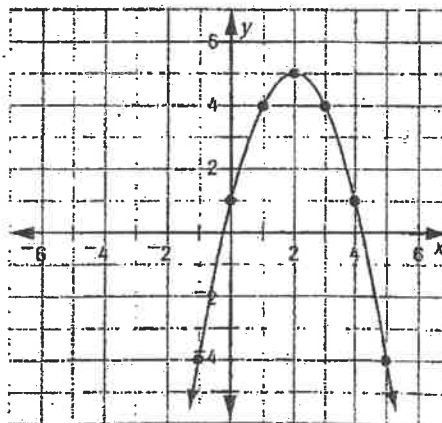
Write the vertex of each graph.

18. $y = x^2 + 6x + 8$



Vertex: _____

19. $y = -x^2 + 4x + 1$



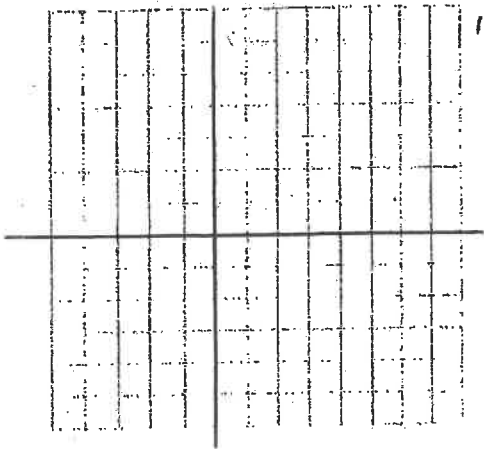
Vertex: _____

Name _____

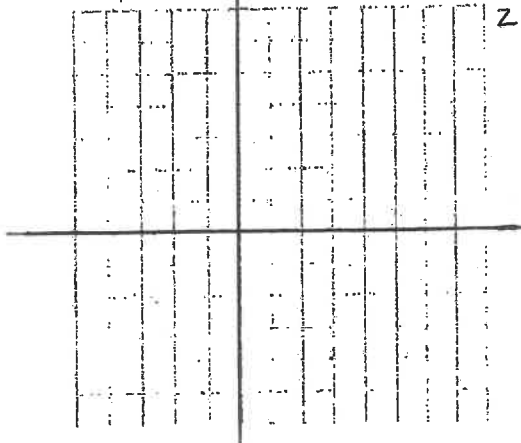
Date _____

Use the slope and point to graph each line. Write each equation in the form $y = mx + b$.

11. slope = $\frac{2}{3}$, point (6, 1)

Equation: $y =$ _____

13. slope = $-\frac{1}{2}$, point (12, 7)

Equation: $y =$ _____

Write each linear equation in standard form.

REMEMBER: $ax + by + c = 0$ where a , b , and c are integers and $a > 0$.

16. $y = \frac{1}{2}x - 3$ _____

20. slope $m = -\frac{1}{4}$, point (-8, -1)

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Solving Linear Equations

Directions: Mark the best possible answer for each problem.

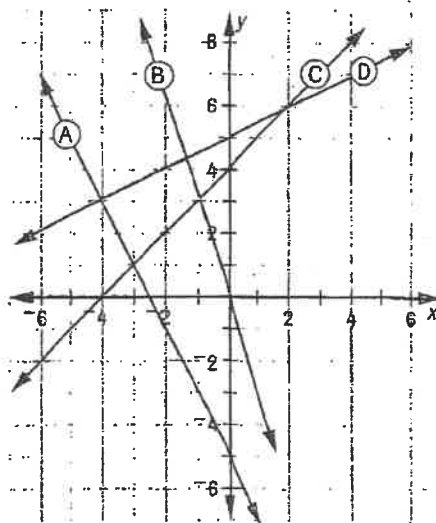
1. The set of ordered pairs that satisfies the equation $y = 2x + 8$ is—
 - A. (2, 11), (1, 10), (0, 7)
 - B. (0, 8), (3, 14), (4, 16)
 - C. (1, 10), (2, 12), (5, 17)
 - D. (2, 12), (1, 10), (0, 4)

3. The standard form for the linear equation $y = -3x + 5$ is—
 - A. $-3x - y + 5 = 0$
 - B. $-3x + 5 = y$
 - C. $3x + y - 5 = 0$
 - D. $y = 3x + 5$

5. The slope of the equation $x = 3$ is—
 - A. 0
 - B. Undefined
 - C. 3
 - D. 1

Directions: Match each equation with its graph at the right.

7. $y = -3x$ line _____
8. $-x + y = 4$ line _____



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Use the Distributive Property to simplify each expression. Show your work.

17. $-2(xf - 6) + 5xf - 12$

20. $-8\sqrt{27x} + -3\sqrt{3x}$

Multiply. Remember to combine like terms.

25. $(a + b)(a - b)$ _____

27. $(a + b)(a + b)$ _____

28. $(x - 5)^2$ _____

Simplify each expression. Follow the rules for multiplying and dividing with powers.

30. $a^3 \cdot a^4 + a^2$ _____

34. $ax^2 \cdot a^2x^2$ _____

Simplify each expression:

35. $3\sqrt{8} \cdot 4\sqrt{8}$ _____

37. $2\sqrt{50} \cdot \sqrt{2}$ _____

38. $4\sqrt{2a} \cdot 5\sqrt{a} \cdot \sqrt{2}, a > 0$ _____

Complete the table of values for each equation.

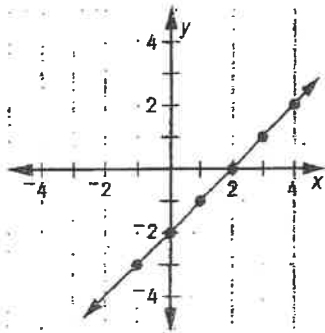
5. $y = 2x - 3$

x	0	1	2	3	4	5	6
y	-3			3			

To write the slope intercept for a line, remember: $y = mx + b$ Slope = $\frac{\text{change in } y}{\text{change in } x}$
 m = the slope b = the y intercept

Look at each graph. Write the slope-intercept form of the equation for each line.

7.



9.

