

Name _____

Algebra I Review

Evaluate the expression.

1. $-55 + (-9) - 4 =$ _____

2. $|-2| + 36 - 5 =$ _____

3. $-17 + 40 - 56 =$ _____

4. $10^2 \div 5 \times 4 =$ _____

5. $75 - 3[(-22 + 15) - 2^3] =$ _____

6. $\frac{4 + 48 \div 12}{-6 + 2(4)} =$ _____

Find the slope. If the slope is zero or undefined, be sure to specify.

7. $(1, 10), (-4, 8)$ $m =$ _____

8. $(7, 6), (3, 6)$ $m =$ _____

9. $(-11, 3), (-3, -5)$ $m =$ _____

Solve the equation.

10. $9(x - 6) = 36$

11. $-3(5x - 4) = 3x - 42$

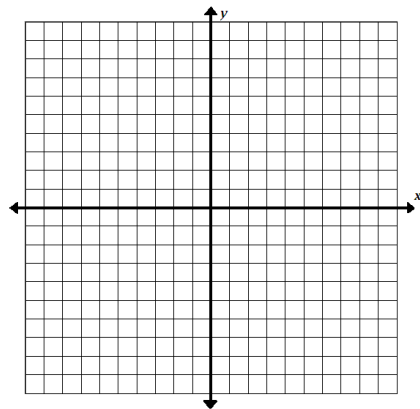
12. $14x - 42 = -7(-2x + 6)$

Use the equation $y = -4x + 7$ to answer questions 13 – 15.

13. What is the slope of the line? _____

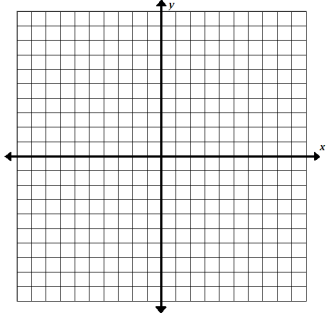
14. What does the "+ 7" part of the equation tell you?

15. Graph the equation.

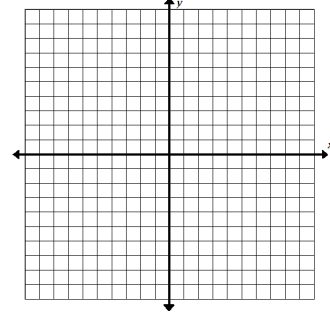


Write the equation in slope-intercept form and graph the equation.

16. $-8x + 2y = -18$

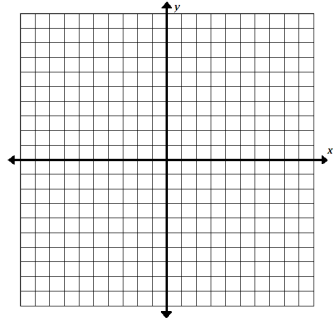


17. $6x - 4y + 24 = 0$

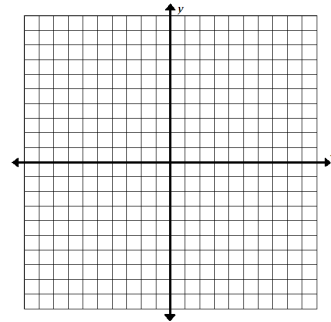


Graph the equation (any method).

18. $4x + 12y = -36$



19. $y - 5 = \frac{1}{2}(x + 4)$



Solve the inequality. Graph the solution on a number line.

20. $7x - 23 < 40$



21. $-8y + 6 \geq 54$



22. $9w - 38 > -6w + 22$



Solve the system of equations using any method.

$$\begin{aligned} 23. \quad 2x - 5y &= 22 \\ 7x + 5y &= 32 \end{aligned}$$

$$\begin{aligned} 24. \quad x - 4y &= -28 \\ 2x + 6y &= 70 \end{aligned}$$

Simplify the expression.

$$25. \quad (2x)^4(7x) = \underline{\hspace{2cm}}$$

$$26. \quad \frac{2^{12}}{2^2} = \underline{\hspace{2cm}}$$

$$27. \quad (-4x^5y^2)^0 = \underline{\hspace{2cm}}$$

$$28. \quad w^{28} \cdot w^9 = \underline{\hspace{2cm}}$$

$$29. \quad (a^8)^7 = \underline{\hspace{2cm}}$$

Write each number in scientific notation.

$$30. \quad 4,050 = \underline{\hspace{3cm}}$$

$$31. \quad 0.00093 = \underline{\hspace{3cm}}$$

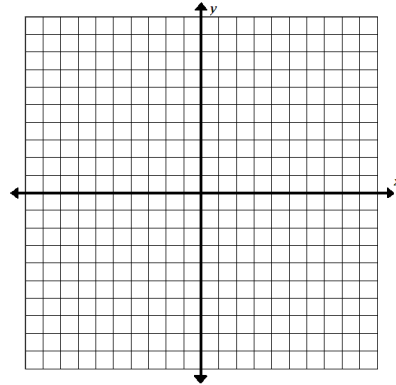
Quadratic Equations

32. What is the quadratic formula?

$X =$

33. Fill in the table and draw the graph for the equation $y = x^2 + 1$.

x	y
-2	
-1	
0	
1	
2	



34. For the graph above:

- a. How many solutions does this equation have? _____
- b. What is the line of symmetry? _____
- c. Where is the vertex? _____
- d. What is the shape of this graph called? _____

Find the product.

35. $(x + 6)(x - 12)$

36. $(8 + y)(8 - y)$

37. $(3x + 5)(4x - 2)$

Solve each equation.

38. $x^2 + 11x + 24 = 0$

39. $x^2 + 9x - 36 = 0$

40. $x^2 - 11x = -30$

41. $x^2 - 36 = 0$

42. $4x^2 - 12x = -9$

Simplify the radical.

43. $\sqrt{96}$

Find the GCF and LCM for each set of monomials.

44. $15x^3, 20x^4$

45. $18a^6b, 45a^3b^8c^6$

Algebra I Review Answers

Evaluate the expression.

1. $-55 + (-9) - 4 = -68$

2. $|-2| + 36 - 5 = 33$

3. $-17 + 40 - 56 = -33$

4. $10^2 \div 5 \times 4 = 80$

5. $75 - 3[(-22 + 15) - 2^3] = 120$

6. $\frac{4 + 48 \div 12}{-6 + 2(4)} = 4$

Find the slope. If the slope is zero or undefined, be sure to specify.

7. $(1, 10), (-4, 8) \quad m = \frac{2}{5}$

8. $(7, 6), (3, 6) \quad m = 0$

9. $(-11, 3), (-3, -5) \quad m = -1$

Solve the equation.

10. $9(x - 6) = 36$

$x = 10$

11. $-3(5x - 4) = 3x - 42$

$x = 3$

12. $14x - 42 = -7(-2x + 6)$

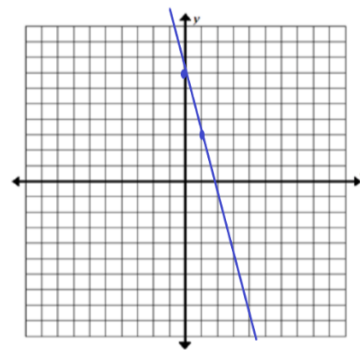
Infinitely Many Solutions

Use the equation $y = -4x + 7$ to answer questions 13 – 15.

13. What is the slope of the line? -4

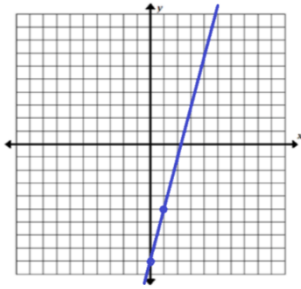
14. What does the “+ 7” part of the equation tell you? *It is the y-intercept (it tells you where to plot a point on the y-axis).*

15. Graph the equation.

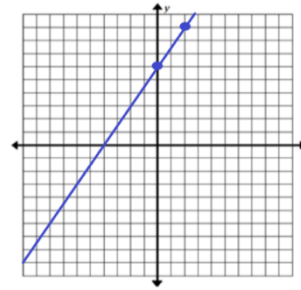


Write the equation in slope-intercept form and graph the equation.

16. $-8x + 2y = -18$ $y = 4x - 9$

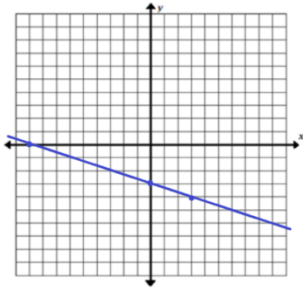


17. $6x - 4y + 24 = 0$ $y = \frac{3}{2}x + 6$

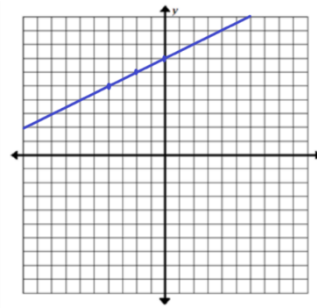


Graph the equation (any method).

18. $4x + 12y = -36$



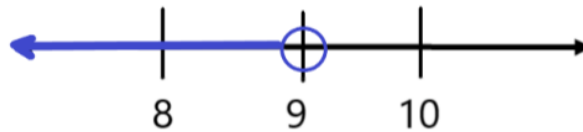
19. $y - 5 = \frac{1}{2}(x + 4)$



Solve the inequality. Graph the solution on a number line.

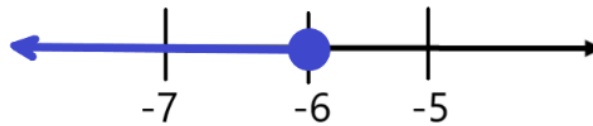
20. $7x - 23 < 40$

$x < 9$



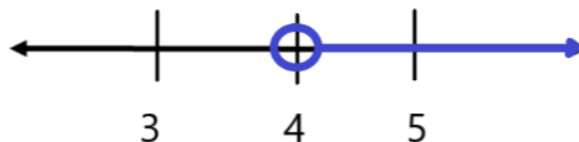
21. $-8y + 6 \geq 54$

$y \leq -6$



22. $9w - 38 > -6w + 22$

$w > 4$



Solve the system of equations using any method.

$$\begin{aligned} 23. \quad 2x - 5y &= 22 \\ 7x + 5y &= 32 \end{aligned}$$

$$(6, -2)$$

$$\begin{aligned} 24. \quad x - 4y &= -28 \\ 2x + 6y &= 70 \end{aligned}$$

$$(8, 9)$$

Simplify the expression.

$$25. \quad (2x)^4(7x) = 112x^5$$

$$26. \quad \frac{2^{12}}{2^2} = 2^{10}$$

$$27. \quad (-4x^5y^2)^0 = 1$$

$$28. \quad w^{28} \cdot w^9 = w^{37}$$

$$29. \quad (a^8)^7 = a^{56}$$

Write each number in scientific notation.

$$30. \quad 4,050 = 4.05 \times 10^3$$

$$31. \quad 0.00093 = 9.3 \times 10^{-4}$$

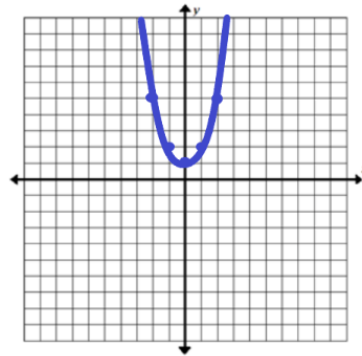
Quadratic Equations

32. What is the quadratic formula?

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

33. Fill in the table and draw the graph for the equation $y = x^2 + 1$.

x	y
-2	5
-1	2
0	1
1	2
2	5



34. For the graph above:

- How many solutions does this equation have? **None**
- What is the line of symmetry? **The y-axis ($x = 0$)**
- Where is the vertex? **(0, 1)**
- What is the shape of this graph called? **Parabola**

Find the product.

35. $(x + 6)(x - 12)$

$$x^2 - 6x - 72$$

36. $(8 + y)(8 - y)$

$$64 - y^2$$

37. $(3x + 5)(4x - 2)$

$$12x^2 + 14x - 10$$

Solve each equation.

38. $x^2 + 11x + 24 = 0$

$$x = -3, -8$$

39. $x^2 + 9x - 36 = 0$

$$x = 3, -12$$

40. $x^2 - 11x = -30$

$$x = 6, 5$$

41. $x^2 - 36 = 0$

$$x = 6, -6$$

42. $4x^2 - 12x = -9$

$$x = \frac{3}{2}$$

Simplify the radical.

43. $\sqrt{96} = 4\sqrt{6}$

Find the GCF and LCM for each set of monomials.

44. $15x^3, 20x^4$ GCF = $5x^3$ LCM = $60x^4$

45. $18a^6b, 45a^3b^8c^6$ GCF = $9a^3b$ LCM = $90a^6b^8c^6$