

## **Summer Assignment for Students Going into 11<sup>th</sup> grade Algebra 2 and Topics in Algebra 2**

Directions:

- 1. Complete the following problems in this packet in the space provided without a calculator. If you need more space, attach your work. Show all work for full credit.**
2. If you need instruction or review of the topics in this packet, go to <http://www.khanacademy.org/> . These are excellent videos that will re-teach and remind you how to go about the problems in this packet.
- 3. These problems should be a good review of the concepts that are necessary for you to know at the start of the course you are entering.**
4. Bring this completed packet of problems, including your work, with you to math class on the first day of school. **It will be collected and graded.**
- 5. Be sure you understand this material thoroughly and be prepared to take a 30-point quiz** on this material on the third day of school.

**11<sup>th</sup> graders going to MUSS:**

Take the completed packet to Israel. You will have a quiz at MUSS.

## Summer Assignment: Algebra II (Regular or Basic)

Evaluate each expression:

1.  $-3 - 6 \div 2 - 12$

2.  $-5 \div 1 + 2(7 - 10)^2$

3.  $-x^2 + 3x - 4$  when  $x = 2$

4.  $7x - 3x - 8x^2$  when  $x = -1$

Simplify each expression:

5.  $7y - 2x + 5x - 3y + 2x$

6.  $4(3 - x) + 5(x - 6)$

7.  $6x^2 - 3x + 5x^2 + 2x$

8.  $2(x^2 + x) - 3(x^2 - 4x)$

Solve each equation:

9.  $2 - 3a = 4 + a$

10.  $8(n - 6) = -16$

11.  $-4x - 4 = 3(2 - x)$

Solve each equation for y (in terms of x):

12.  $5x - y = 10$

13.  $x + 4y = -8$

14.  $4x - 2y = 5$

15. Solve the formula for L:  $P = 2L + 2W$

Use the formula Distance = Rate x Time to solve each problem:

16. How long will it take to drive 325 miles at 55 miles per hour?

17. While on vacation, you take a taxi from the airport to your hotel for \$ 21.85.

The taxi costs \$ 2.95 plus \$ 1.35 per mile. How far is it from the airport to the hotel?

Solve each inequality and graph your solution on a number line:

18.  $6x - 3 < 2x + 5$

19.  $5x + 6 > -x + 5$

20.  $12 - 5x \geq -13$

21.  $-3x + 4 \geq 2x + 19$

Find the slope of the line passing through the given points:

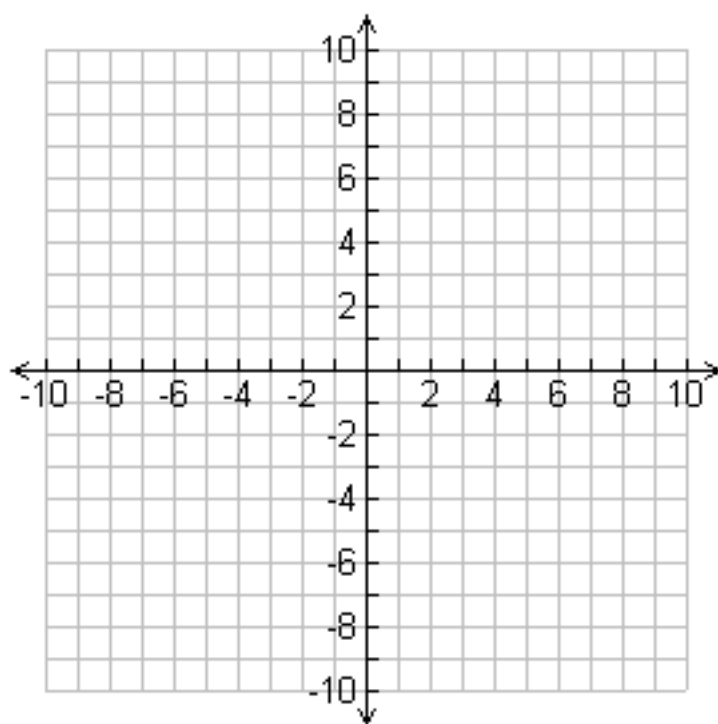
22. (3,6) and (-6,0)

23. (2,4) and (-2,4)

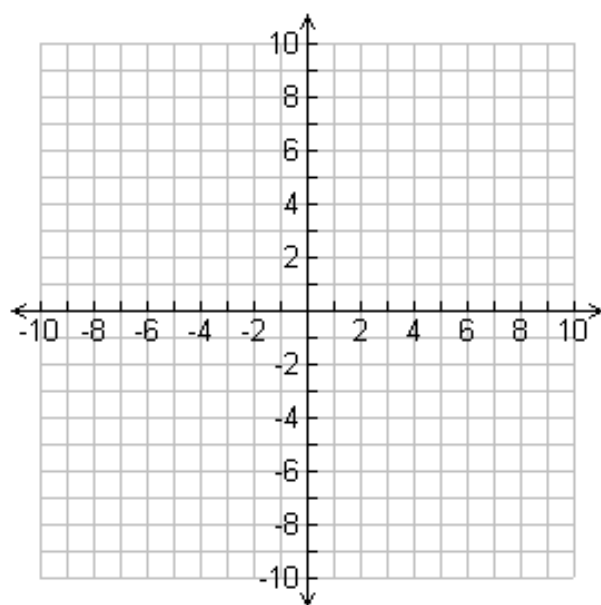
24. (-7,2) and (-1, -4)

25. (5,1) and (5,4)

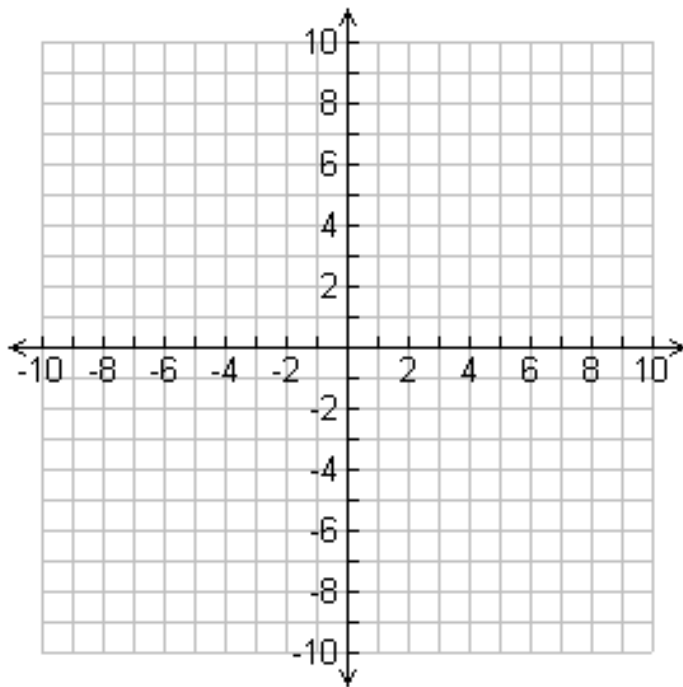
Graph each equation:      26.  $y = -x + 3$



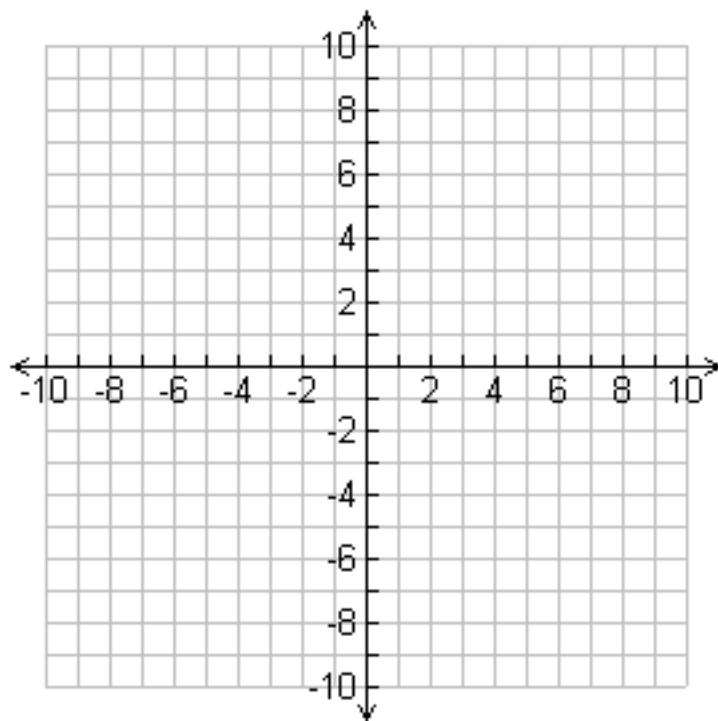
27.  $y = \frac{5}{3}x - 5$



28.  $4x + 2y = 6$



29.  $-4x + 8y = -16$



Write the equation (in slope-intercept form) of each line:

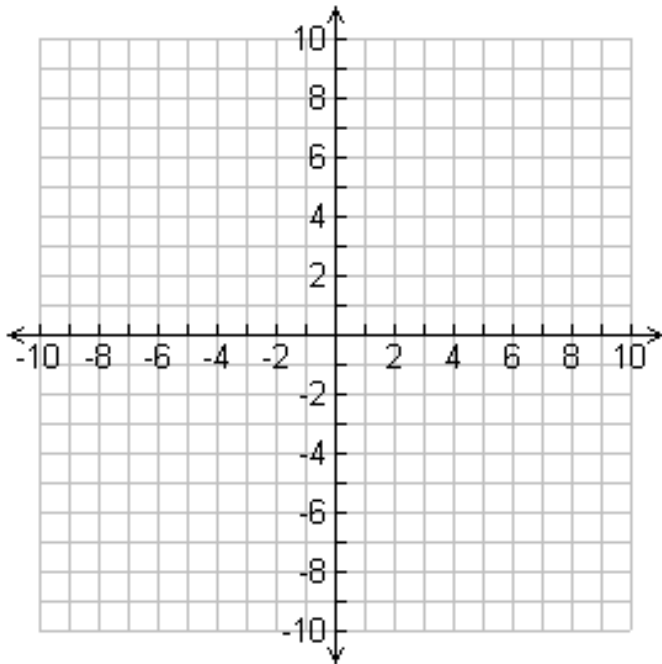
30. slope = -1, y-intercept = 2

31. Slope = 3, contains point (-4,1)

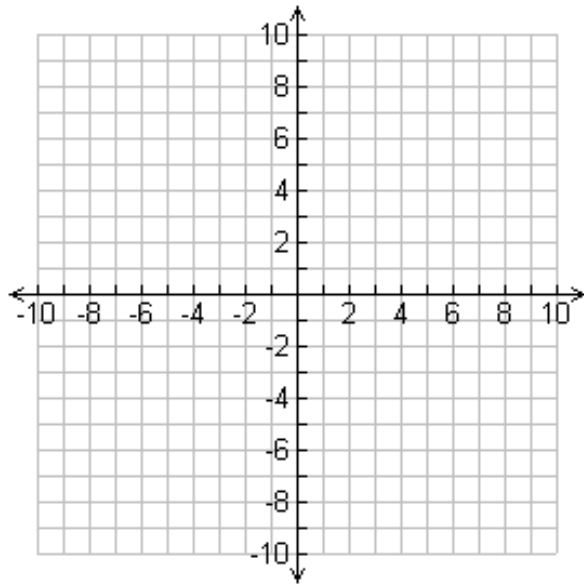
32. contains points (3,- 8) and (8,2)

Graph each system of equations and tell how many solutions it has. If there is exactly one solution, find it (graphically or algebraically).

33.  $x + y = 2$  and  $2x - 3y = 9$



34.  $x = 3y$  and  $y = \frac{1}{3}x - 2$



Solve each system using any algebraic method (substitution or elimination):

35.  $9x - 5y = -30$

$x + 2y = 12$

36.  $x + 3y = -2$

$x + y = 2$

$$\begin{aligned} 37. \quad 2x + 3y &= -7 \\ -4x - 5y &= 13 \end{aligned}$$

$$\begin{aligned} 38. \quad 3x + 4y &= 15 \\ -2x + 6y &= 3 \end{aligned}$$

Factor completely (Remember the GCF):

$$39. \quad x^2 + 7x + 12$$

$$40. \quad x^2 - 4x - 21$$

$$41. \quad x^2 - 49$$

$$42. \quad 5x^2 - 15x$$

$$43. \quad 2x^2 - 18$$

$$44. \quad 2x^2 - 15x$$

45.  $3x^2 + 13x - 10$

46.  $3x^2 + 7x + 2$

Solve for x:

47.  $x^2 - 5x - 14 = 0$

48.  $3x^2 - 16x + 5 = 0$

Simplify:

49.  $\sqrt{28}$

50.  $\sqrt{50} + \sqrt{18}$

