

## Linear and Quadratic Functions Review

### Review for Test 1

#### Solving Equations

Answers should be whole numbers or fully simplified fractions. No decimals!

1.  $5(v+2) - 9(2v-2) = 9$

2.  $\frac{s-1}{9} = \frac{8s}{2}$

3.  $51 < 4 - (k+1) - k$

4.  $k^2 - 23k + 90 = 0$

5.  $11k^2 - 43k - 4 = 0$

6.  $a^2 + \frac{19}{2}a = -\frac{45}{2}$

7.  $16m^2 - 36 = 0$

8.  $x^2 + x = 20$

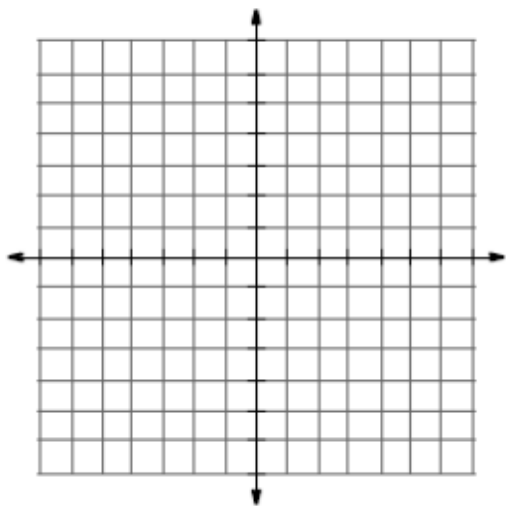
9.  $x^3 + 3x^2 - 25x - 75 = 0$

10.  $x^2 + 6x + 4 = 0$

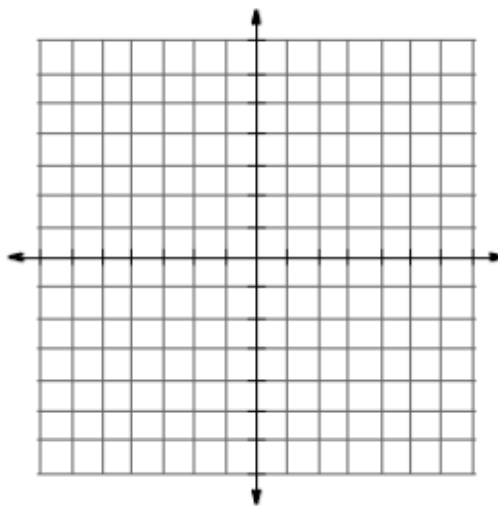
## Graphing

Use exact points, not just a sketch!

11.  $-y - 2x \geq 3$



12.  $3x - 2y = 8$

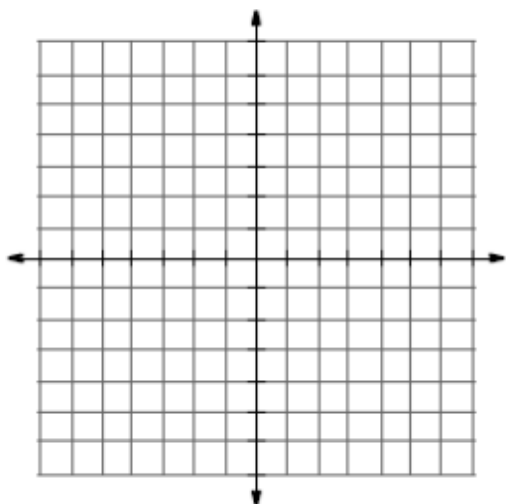


13.  $y = 2x^2 - 8x + 3$

y-intercept:

x-intercepts:

vertex:

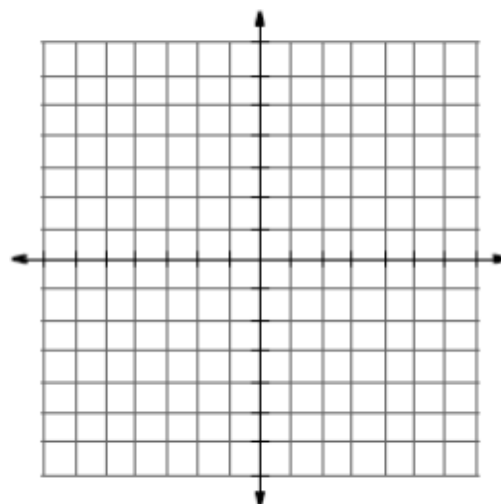


14.  $y = x^2 - 4x + 3$

y-intercept:

x-intercepts:

vertex:



## Math Analysis

15. Solve the system below using substitution:

$$9x = y$$

$$x + 5y = 92$$

17. Solve the system below using elimination:

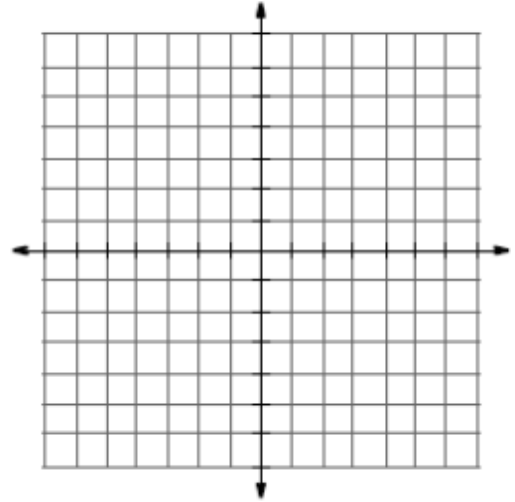
$$x + y = 13$$

$$2x - y = 5$$

16. Solve the system below by graphing:

$$y = 2x + 1$$

$$y = x + 3$$



**Simplify each expression below.**

18.  $(q^2 - 8q - 1) - (2q^2 - 2q + 5)$

19.  $(u^2 + u - 2)(9u^2 - u + 8)$

20.  $(c^2 + 5c - 14) + (5c^2 - 15c + 9)$

21.  $(2n^2 + 1)(2n^2 - 2n + 5)$

**Solve the word problems below.**

- 22.** Steve gets \$50 per day as wages and \$7.50 as commission for every auto part he sells in a day. His daily earnings goal is \$140. How many auto parts must he sell to meet his goal?
- 23.** A square and a rectangle have the same area. The length of the rectangle is 3 inches less than twice the length of the side of the square. The width of the rectangle is 2 inches more than the side of the square. Find the length of the side of the square.
- 24.** A café placed two orders with a distributor. The first order was for 8 pounds of coffee and 5 pounds of tea, and the total cost was \$221. The second order was for 11 pounds of coffee and 2 pounds of tea, and the total cost was \$182. What were the costs of one pound of coffee and of one pound of tea?
- 25.** A football field measuring 120 yards by 50 yards is to have a track installed all around it, increasing the total area to 7800 square yards. What will be the width of the track?