Answer the questions.

1. A line passes through the points (3, 3) and (–1, 1). Give its equation in slope-intercept form.

2. What is true of two different lines that have the same slope?

3. What is true of two different lines whose slopes are negative reciprocals of each other?

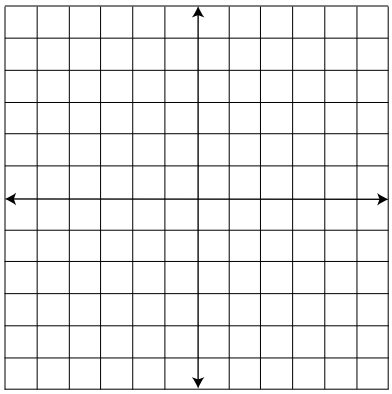
4. When both sides of an inequality are multiplied by negative one, what happens to the inequality sign?

5. Given the points (–2, 5) and (2, 2), what is the distance between them?

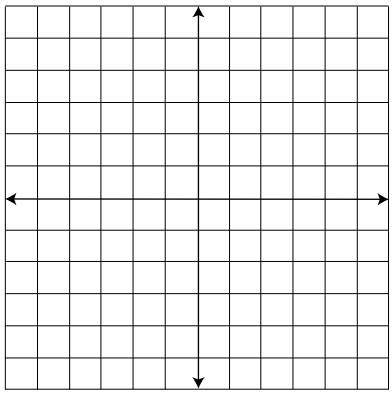
6. What is the midpoint between the two points given in #5?

Name the figure represented by each formula below. Sketch each figure on a graph.

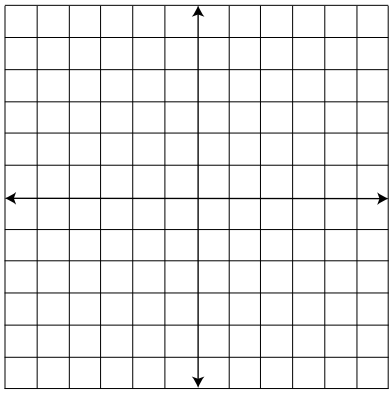
7. $X^2 + Y^2 = 4$



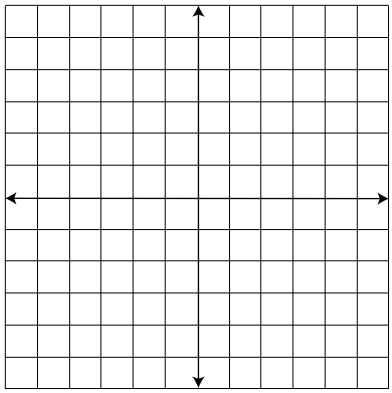
8. $4X^2 + Y^2 = 16$



9. $Y = X^2$



10. $XY = 6$

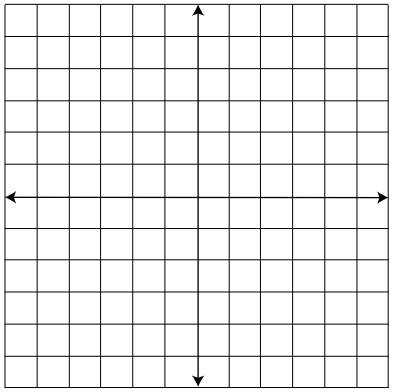


Find the vertex (maxima or minima).

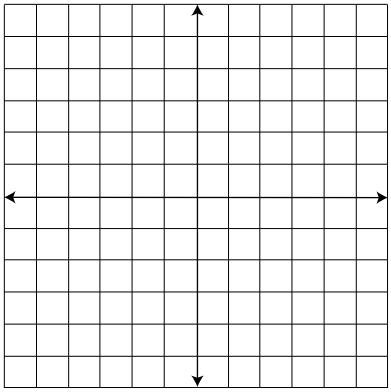
11. $Y = X^2 - 4X + 2$

Find the solutions for each pair of equations. Sketch a graph of each equation, and show the solutions.

12. $X^2 + Y^2 = 9$
    $Y = X + 3$



13. $Y = X^2$
    $XY = 8$



Answer the questions.

14. I have 12 coins in my pocket. They are all either dimes or nickels. The value of the coins is $.85. How many of each coin do I have?

15. Find three consecutive integers such that two times the first, plus the second, equals the third integer plus nine.

16. A scientist needs three liters of a solution that is 30% salt and 70% water. He has a solution that is 20% salt and one that is 50% salt. How much of each should he use to make the desired solution?

17. In two years, Kara will be three times as old as Leslie. One year ago, Leslie was one-sixth the age of Kara. How old are they now?

18. Dustin's boat traveled 36 miles downstream in three hours. The same boat traveled 30 miles upstream in five hours. What is the speed of the boat and the speed of the current?

19. Find the solution that will satisfy all three equations.

    A. $2X - 3Y + 3Z = 9$
    B. $4X + Y - 2Z = 0$
    C. $-6X - 2Y + Z = 0$

20. Name the two components of a vector.