Name _____

Date _____

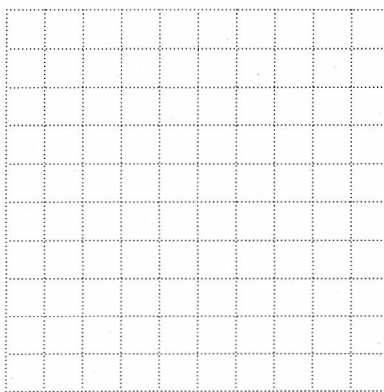**Use a straight edge to draw straight lines.**

1. In which quadrant does the point $(-3, -4)$ lie?

   1. _____

2. Write an equation for the vertical line passing through the point $(-5, 3)$.

   2. _____

3. Sketch the graph of the equation $y = 3x - 1$. Label the intercepts.

   3. _Use graph at left._

4. Find the slope of the line containing the points.

   $(3, -1), (6, 4)$

   4. _____

5. Which line is steeper?

   $y = \frac{5}{3}x - 2, \quad y = \frac{3}{2}x + 3$

   5. _____

6. Line 1 contains $(2, 4)$ and $(0, -2)$. Line 2 contains $(-1, -3)$ and $(1, 3)$. Are the lines parallel, perpendicular, or neither?

   6. _____

7. Find the x- and y-intercepts of the line.

   $5x - 4y = 20$

   7. _____

8. Write the equation in slope-intercept form. Then identify the slope and y-intercept.
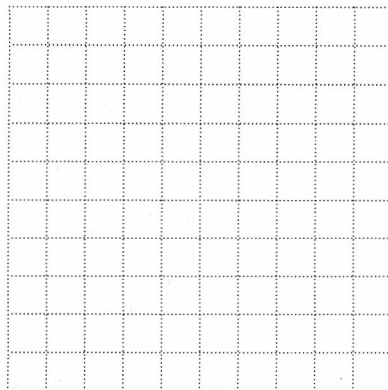
   $15x - 3y = 7$

   8. _____

9. Sketch the line.

$$y = \tfrac{3}{4}x - 2$$

9. _Use graph at left._

10. The values of x and y vary directly. $y = -6$ when $x = \tfrac{1}{4}$. Write an equation that relates the variables.

10. _____

11. *Rental Car Charge*   A rental car costs $25 plus a fixed charge per mile driven. The total charge for 210 miles of use was $67. Write an equation for the cost, C (in dollars), in terms of the miles driven, x.
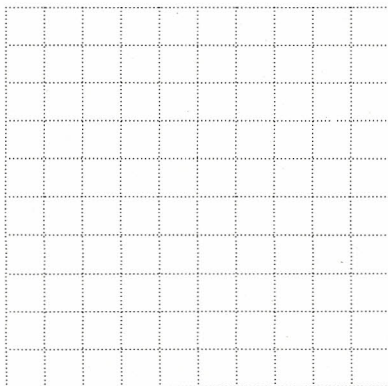
11. _____

12. Is the ordered pair $(-3,\ 7)$ a solution of the inequality

$$7x - 9y \le -10?$$

12. _____

13. Sketch the graph of the inequality.

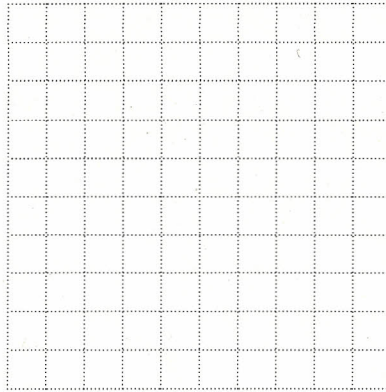$$\tfrac{7}{3}x > 7$$

13. _Use graph at left._

14. Sketch the graph of the inequality.

$$y \geq \tfrac{2}{3}x + 2$$

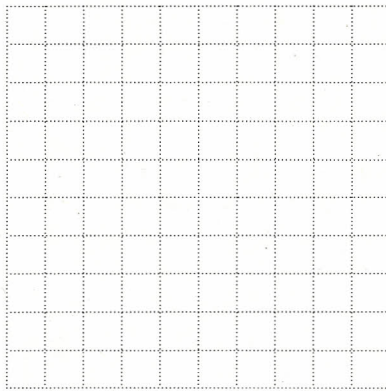**14.** <u>*Use graph at left.*</u>

15. Find the vertex of the graph.

$$y = |3 - x| - 3$$

15. _____

16. Sketch the graph of the equation.

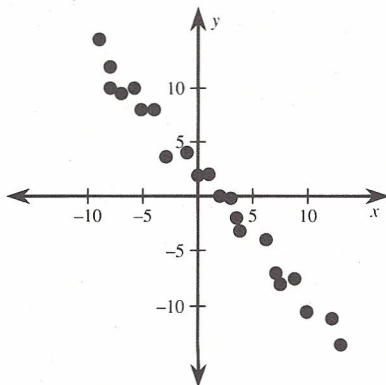$$y = \tfrac{1}{2}|x - 2|$$

16. <u>*Use graph at left.*</u>

17. *Population*   The population, P (in 1000s), of a town can be modeled by $P = 2|t - 6| + 4$, where $t = 0$ represents 1990. During which two years does the town have a population of 8000?

17. _____

18. For the scatter-plot shown, state whether x and y have a positive correlation, a negative correlation, or no correlation.

18. _____

      Algebra 2