

1. A hospital tracks the number of emergency room visits during the fall and winter months

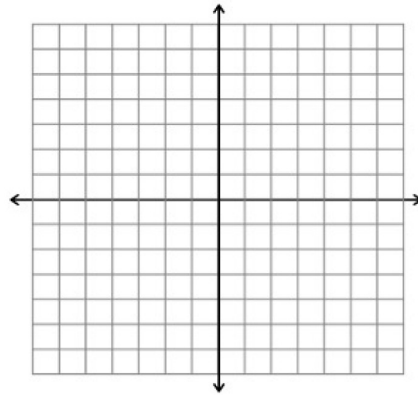
Month	Oct	Nov	Dec	Jan	Feb
Visits	124	163	155	171	192

- a. Make a scatter plot by hand and describe the correlation.
- b. Use two ordered pairs to write a prediction equation.
- c. Use your prediction equation to predict the number of emergency room visits for March.
- d. Find the line of best fit on your graphing calculator.

2. Graph each function and identify the domain and range.

a.

$$f(x) = \begin{cases} -2x & \text{if } x \leq -1 \\ x + 1 & \text{if } -1 < x < 3 \\ x & \text{if } x \geq 3 \end{cases}$$

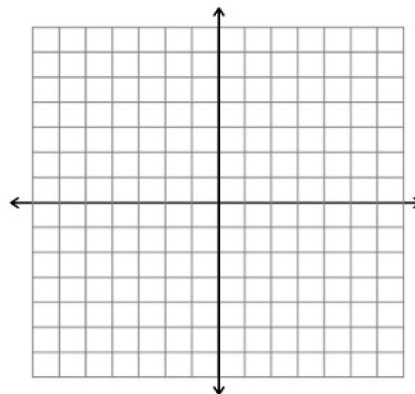


Domain:

Range:

b.

$$f(x) = \begin{cases} -3 & \text{if } x < -1 \\ 4x - 3 & \text{if } -1 \leq x \leq 3 \\ x & \text{if } x > 3 \end{cases}$$

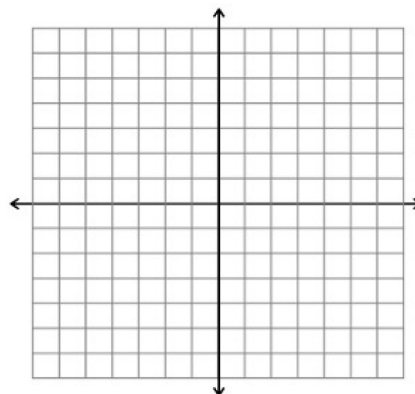


Domain:

Range:

c.

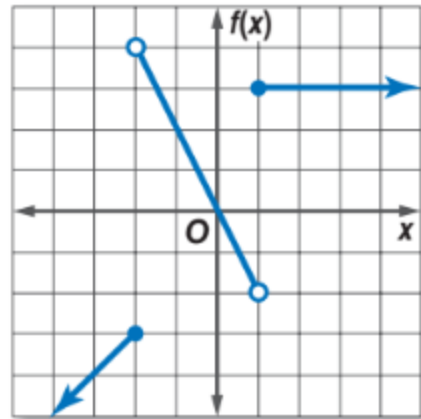
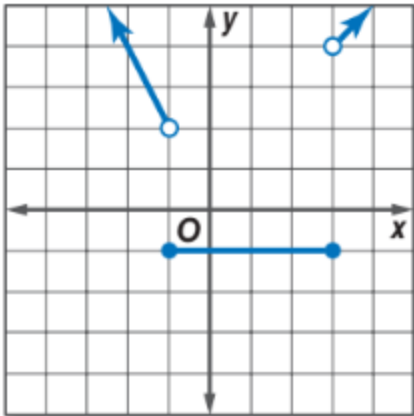
$$f(x) = \begin{cases} -x & \text{if } x < -2 \\ x + 2 & \text{if } -2 \leq x \leq 2 \\ 5 & \text{if } x > 2 \end{cases}$$



Domain:

Range:

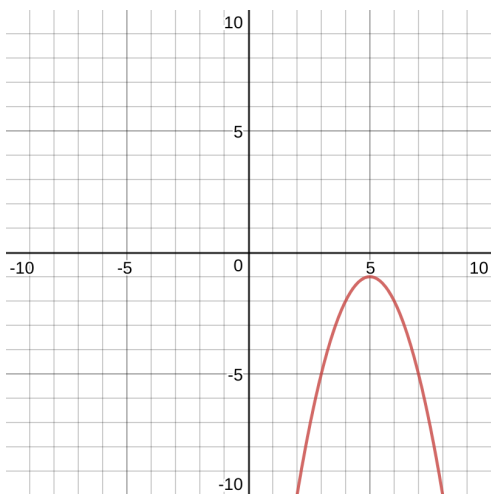
3. Write the piecewise function as shown:



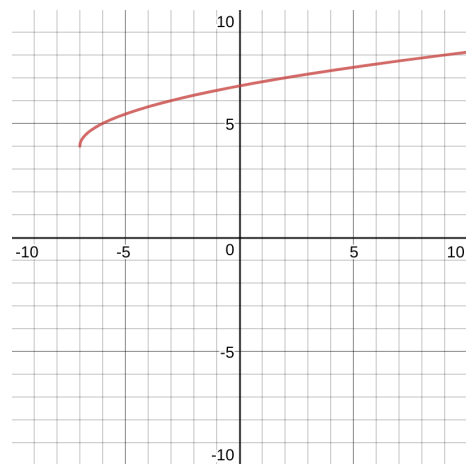
4. Describe the translation $y = x^2 + 5$

5. Write the equation of the graph:

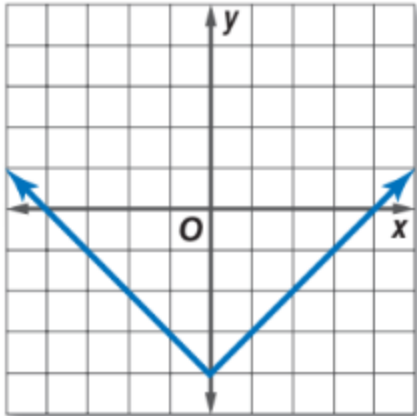
a.



b.

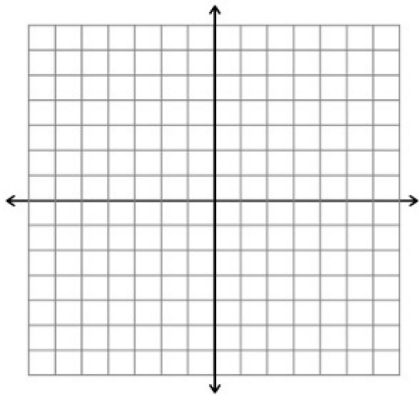


c.

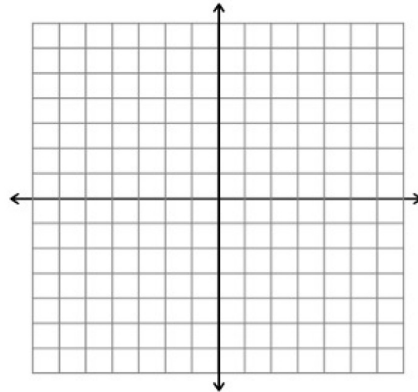


6. Graph the following. Label 2 points on the graph.

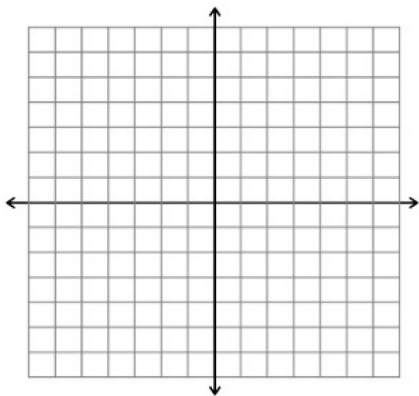
a. $y = \frac{1}{3}|x - 3| + 2$



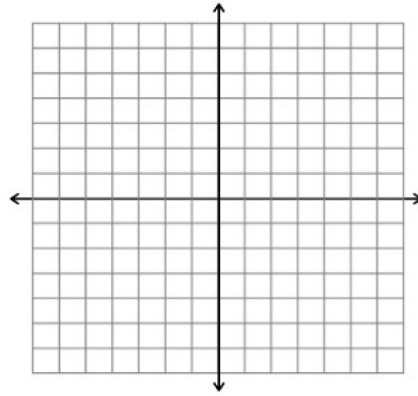
c. $y = (x - 1)^2 - 4$



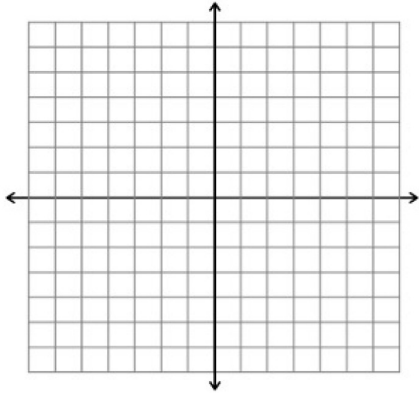
b. $y = \sqrt{x + 6}$



d. $y = 2(3 + x)^2$

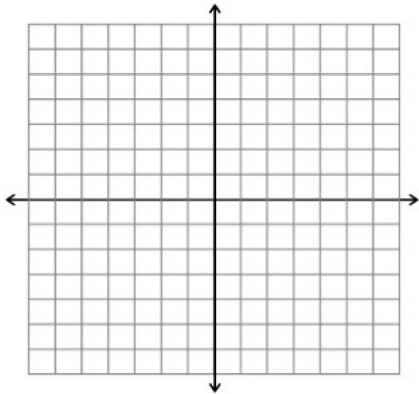


e. $y + 1 = |x|$

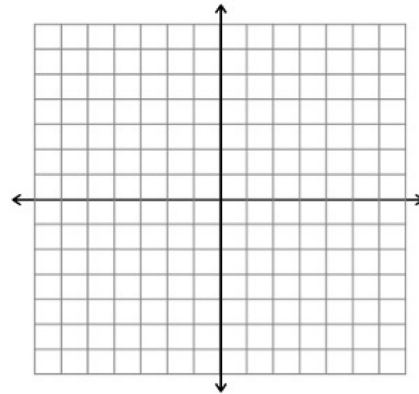


7. Graph the inequality

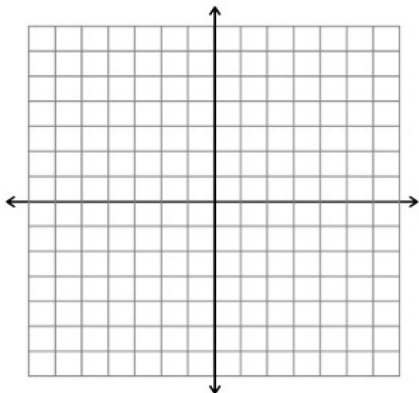
a. $y \leq 4x - 1$



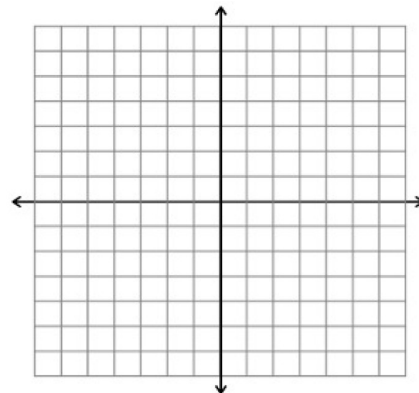
c. $x - 3y < 6$



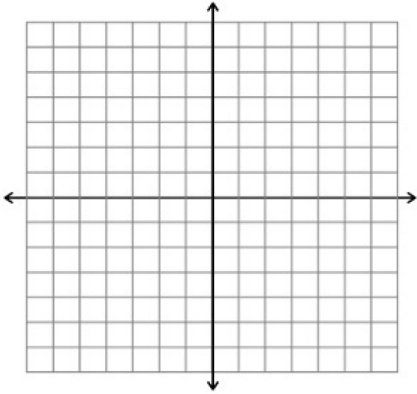
b. $y > |x + 3| - 2$



d. $2y \leq |x - 3|$



e. $y + 3 < |x + 1|$



8. Spencer has saved \$96 for a trip to his favorite bookstore. Each paperback book costs \$8 and each hardback book costs \$12. Write and graph an inequality that shows the number of paperback books and hardback books Spencer can purchase.

