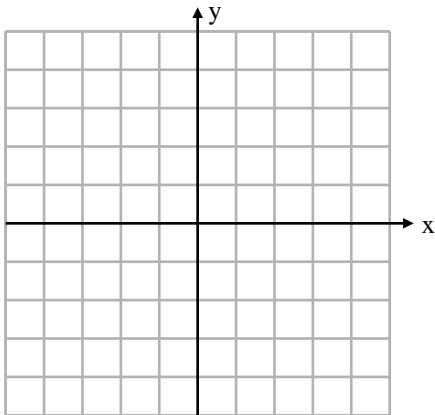
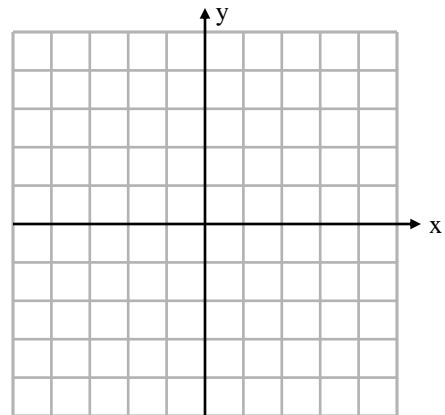


1. How is the graph of  $y=f(x)+3$  related to the graph of  $y=f(x)$  ?
- $y=f(x)$  has been translated 3 units up.
  - $y=f(x)$  has been translated 3 units down.
  - $y=f(x)$  has been translated 3 units to the left.
  - $y=f(x)$  has been translated 3 units to the right.
2. If the function  $y = f(x + 2) - 7$  is translated 7 units to the right, the new equation will be:
- $y = f(x + 9) - 7$
  - $y = f(x - 5) - 7$
  - $y = f(x + 2)$
  - $y = f(x + 2) - 14$
3. Accurately draw the graphs for the following functions:

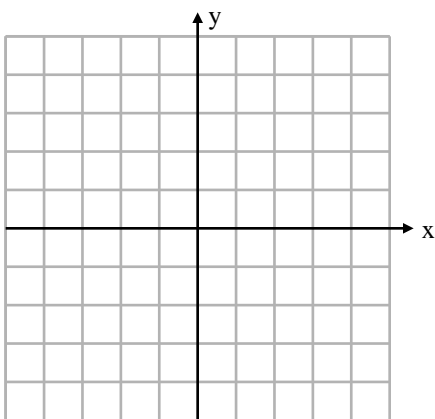
a)  $y = (x-1)^3 - 2$



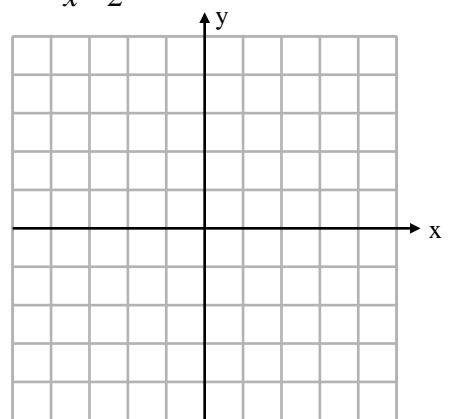
b)  $y = \sqrt{x+4}$



c)  $y = |x+3| + 2$

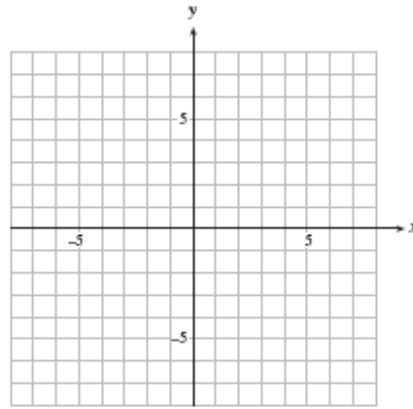
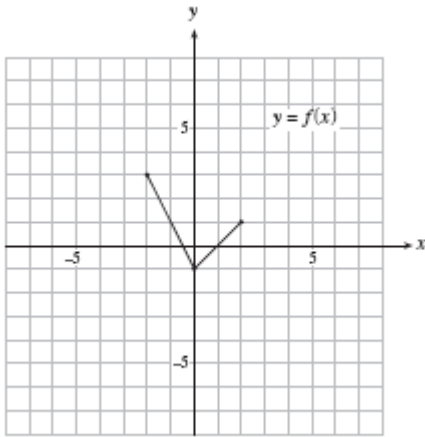


d)  $y = \frac{1}{x-2} - 3$



4. The graph of  $f(x)$  is shown below.

On the grid provided, sketch the graph of  $y = f(x + 2) - 3$ .



5. A polynomial function  $p(x)$  has zeros at 1, 2, and -3 and a y-intercept of 3. Find an equation for the function  $p(x - 1)$ , in factored form in terms of  $x$ .