

**Solve Each Equation or Inequality. Write the answers for the inequalities in interval notation.**

1)  $-6|9 - 6x| = -54$

2)  $8 + |3x - 6| = 17$

3)  $6|-6x + 10| = 12$

4)  $-1 + |x - 7| \leq 2$

5)  $-1 + |-1 + x| \leq -8$

6)  $|7x| - 10 > 11$

**Solve each equation. Remember to check for extraneous solutions.**

7)  $\sqrt{-11 - 2x} = 3$

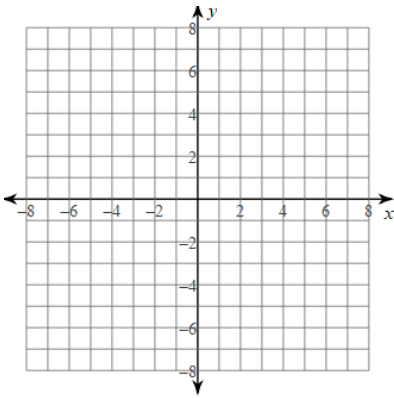
8)  $\sqrt{2x + 2} = x - 3$

9)  $-6 = \sqrt{5x - 36} - x$

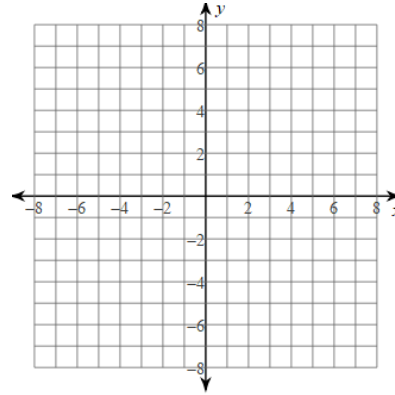
10)  $\sqrt{2x - 3} = \sqrt{3x - 9}$

Sketch the graph of each function.

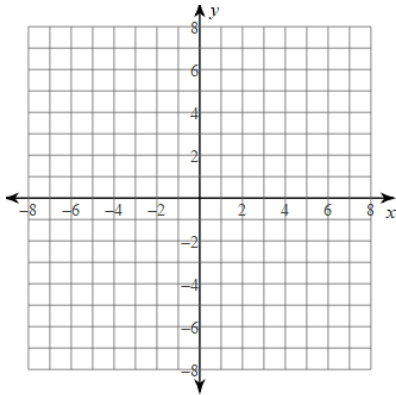
11)  $y = \sqrt{x+5} - 5$



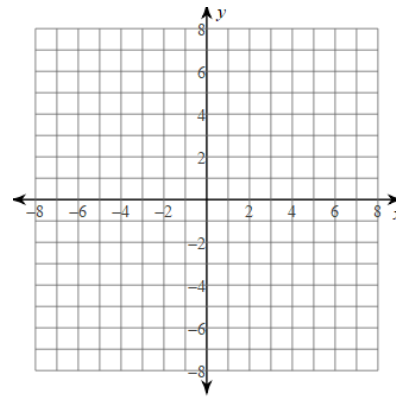
12)  $y = 3\sqrt[3]{x-2} + 1$



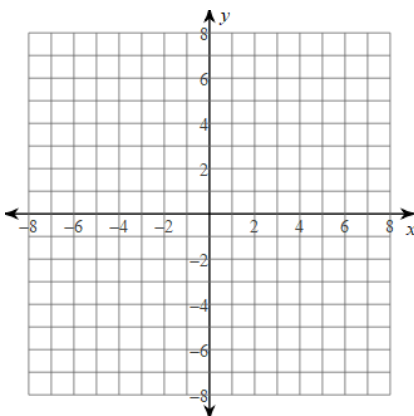
13)  $g(x) = \begin{cases} 3, & x \leq -3 \\ -6, & -3 < x \leq 2 \\ 3, & x > 2 \end{cases}$



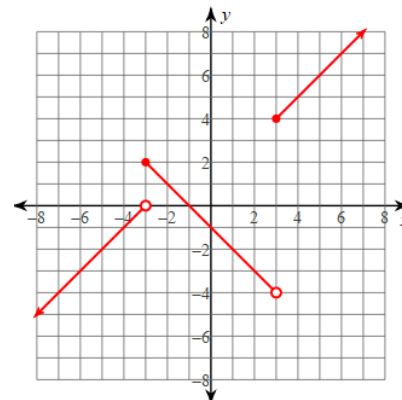
14)  $g(x) = \begin{cases} x - 1, & x \leq -2 \\ x^2 - 1, & -2 < x < 2 \\ x - 2, & x \geq 2 \end{cases}$



15)  $g(x) = \begin{cases} \sqrt{x+3}, & x \leq 0 \\ 6, & 0 < x \leq 4 \\ x - 1, & x > 4 \end{cases}$



16)



$$f(x) = \left\{ \begin{array}{l} \rule{10cm}{0.4pt} \\ \rule{10cm}{0.4pt} \\ \rule{10cm}{0.4pt} \end{array} \right\}$$