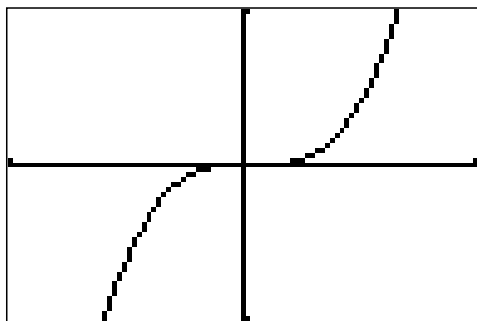
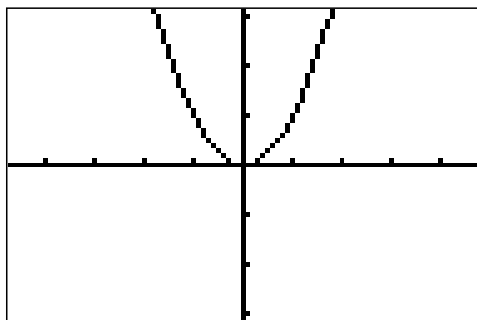


Solutions for Section 1.3 Reading Questions

- Graphing calculators plot points by darkening pixels on the screen. The pixels are then connected by short lines.
- The graphing calculator produces a poor graph of the function $f(x) = \frac{1}{x+3}$ because it connects two points (e.g. $x = 2.99$ and $x = 3.01$), even though the function is undefined between them.
- For the graph of $f(x) = 4x^3 - 0.4x^2$, we see one x -intercept. Actually, f has two x -intercepts, $(0, 0)$ and $(0.1, 0)$.



- It is important to graph a function in a proper viewing window so all of the characteristics of the graph can easily be seen.
- To determine an appropriate viewing window, you should analyze your function.
- In a “squared-up” screen, the distance between units on the x -axis is the same as the distance between units on the y -axis.
- Answers will vary. A good viewing window for the function $f(x) = \frac{3}{(x-20)^2}$ is $10 \leq x \leq 30$ and $-2 \leq y \leq 10$.
-



The domain of this TI-83 viewing window is $-4.7 \leq x \leq 4.7$.

- If you determine that n is a zero of a function by using a calculator graph, and $f(n) \neq 0$, then n is an approximation.
- The x -intercept or zeros of $f(x) = x^3 + 5x^2 + 4x - 4$ are $x \approx -3.56$, $x = -2$, and $x \approx 0.56$. Since $f(-2) = 0$, it is exact. Since $f(-3.56) \neq 0$ and $f(0.56) \neq 0$, these are approximations.