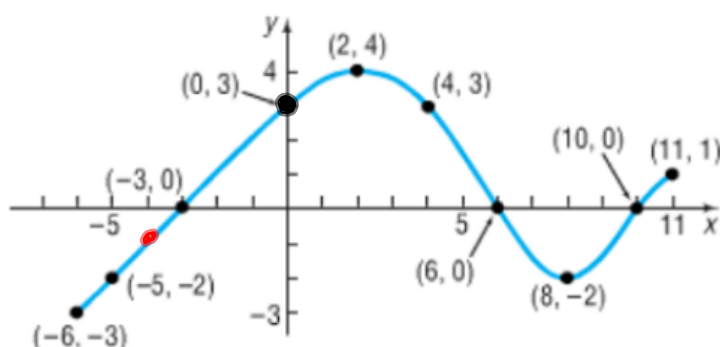


1.2 The Graph of a Function

- OBJECTIVES**
- 1 Identify the Graph of a Function
 - 2 Obtain Information from or about the Graph of a Function

9. Use the given graph of the function f to answer parts (a)–(o).



- Find $f(0)$ and $f(-6)$. $f(0) = 3, f(-6) = -3$
- Find $f(6)$ and $f(11)$. $f(6) = 0, f(11) = 1$ *6 is a zero of f.*
- Is $f(3)$ positive or negative?
- Is $f(-4)$ positive or negative? *Negative*
- For what values of x is $f(x) = 0$? $x = -3, 6, 10$
- For what values of x is $f(x) > 0$? $-3 < x < 6$ or $10 < x \leq 11$
- What is the domain of f ?
- What is the range of f ?
- What are the x -intercepts?
- What is the y -intercept?
- How often does the line $y = \frac{1}{2}$ intersect the graph?
- How often does the line $x = 5$ intersect the graph?
- For what values of x does $f(x) = 3$?
- For what values of x does $f(x) = -2$?
- What are the zeros of f ?

$$\{x \mid -3 < x < 6 \text{ or } 10 < x \leq 11\}$$

↓ conditions

↓ The set of all x such that $f(x) > 0$
 $(-3, 6) \cup (10, 11]$

$$(g) \mathcal{D} = [-6, 11] = \{x \mid -6 \leq x \leq 11\}$$



$$= \{x \mid f(x) \text{ is defined}\}$$

$$(h) \mathcal{R} = [-3, 4] = \{y \mid -3 \leq y \leq 4\}$$

$$= \{y \mid y = f(x) \text{ for some } x \in \mathcal{D}\}$$