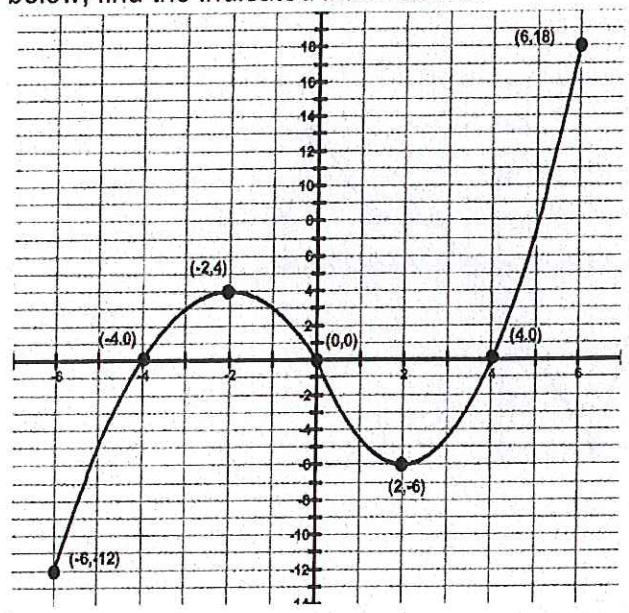


Answer Key - Classwork

Module 1 Analyzing the Graph of a Function

1. For the graph $f(x)$ below, find the indicated information.

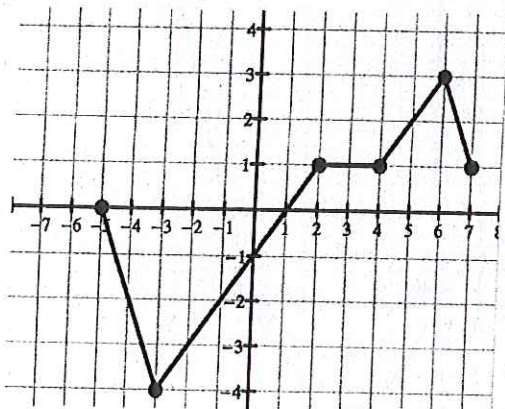


- a. Find $f(0)$. = 0
- b. Find $f(2)$. = -6
- c. Find $f(-6)$. = -12
- d. Is $f\left(\frac{3}{2}\right)$ positive or negative? neg
- e. Is $f(-1)$ positive or negative? pos
- f. For what numbers is $f(x) = 0$? $x \in \{-4, 0, 4\}$
- g. For what numbers is $f(x) < 0$? $x \in [-6, 4) \cup (0, 4)$
- h. What is the domain of $f(x)$? $x \in [-6, 6]$
- i. What is the range of $f(x)$? $y \in [-12, 18]$
- j. What are the coordinates of the x-intercepts? $(-4, 0), (0, 0), (4, 0)$
- k. What are the coordinates of the y-intercept? $(0, 0)$
- l. How often does the line $y = -3$ intersect the graph? three times
- m. How often does the line $x = 1$ intersect the graph? once
- n. Find a value of x for which $f(x) = 7$. $x \in \{5\}$
or $x = 5$

Module 1
Analyzing the Graph of a Function

Answer key - Homework ²⁰

2. For the graph $g(x)$ below, find the indicated information. Write answers in interval notation where appropriate.



- a. Find $g(5)$. $= 2$
- b. State the intervals of x where the graph is increasing. $x \in (-3, 2) \cup (4, 6)$
- c. State the intervals of x where the graph is decreasing. $x \in (6, 7)$
- d. State the interval of x where the graph is constant. $x \in (2, 4)$
- e. State the coordinates of the x -intercept(s). $(-5, 0), (1, 0)$
- f. State the coordinates of the y -intercept. $(0, -1)$
- g. State the domain. $x \in [-5, 7]$
- h. State the range. $y \in [-4, 3]$
- i. Find any local maxima. $x \in \{6\}$ or $(6, 3)$
- j. Find any local minima. $x \in \{-3\}$ or $(-3, -4)$