ASSESSMENT#2-Chapter 1.4-1.6

Directions: Provide complete responses to each question. Make sure to show all your work.

1. Evaluate $f(4)$ if $f(x) = 5x - 9$.

2. Find all real values of x such that $f(x) = 0$.

(a) $f(x) = \dfrac{-9x+8}{5}$

(b) $f(x) = \dfrac{5x-6}{3}$

(c) $f(x) = 4x - 14$

3.   Find the zeros of the following functions algebraically.

(a) $f(x) = x^2 - 15x + 50$

(b) $f(x) = 3x^2 - 5x - 36$

(c) $f(x) = 2x^2 - x - 15$

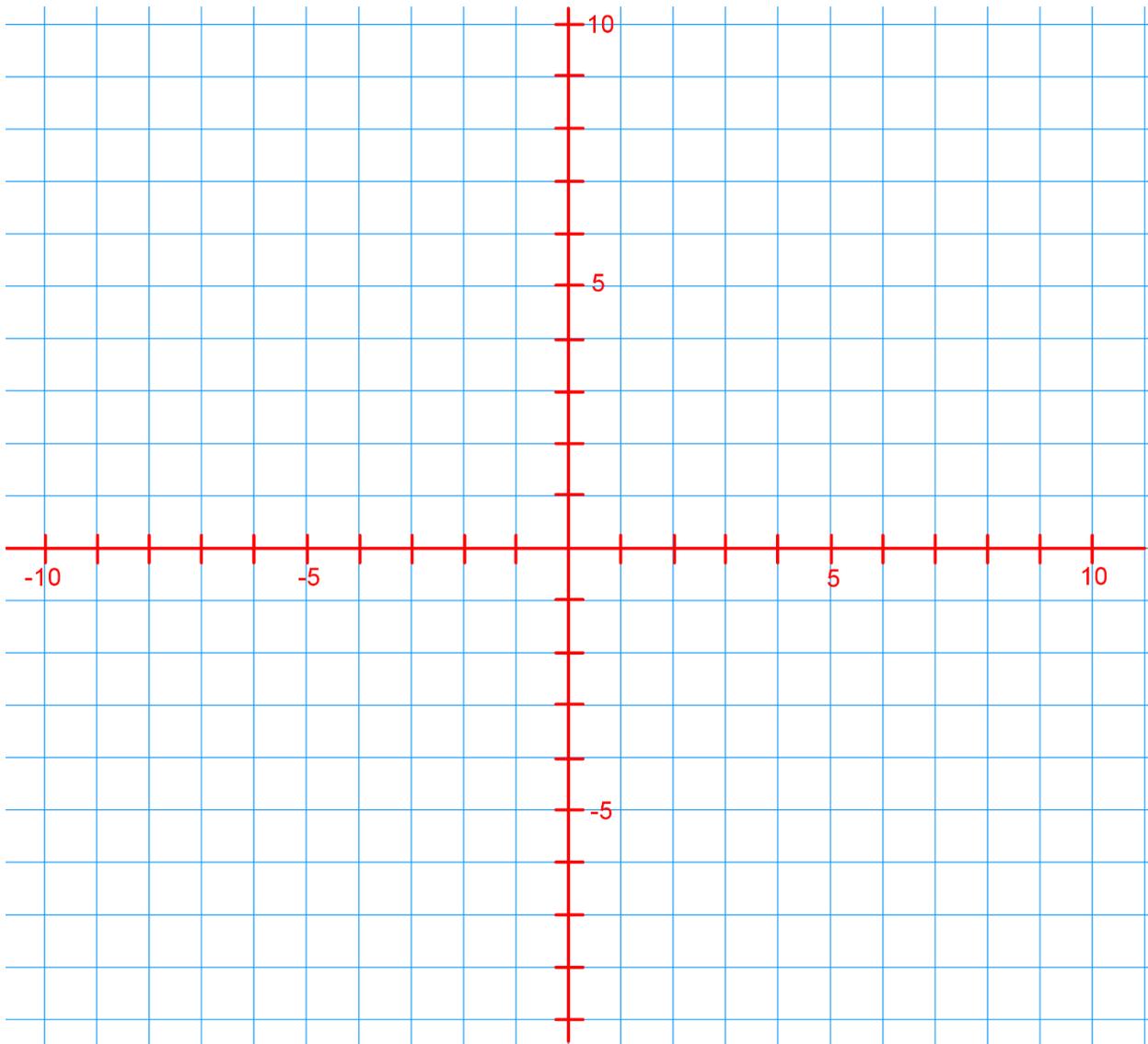4. Find the average rate of change of the function from $x_1 = 3$ to $x_2 = 9$.

$$f(x) = -2x + 12$$

5. Graph of the given function.

$$f(x) = -\frac{4}{x}$$

6. A climber is on a hike. After 2 hours he is at an altitude of 400 feet. After 6 hours, he is at an altitude of 700 feet.

    a. What is the average rate of change?

    b. Write the equation for the line?

7. Use the limit definition of the derivative to differentiate the following functions:

$$16 - x^2$$

8. Differentiate the following functions:

    a. $f(x) = 7x^2$

    b. $f(x) = 5x^3 + 4x + 3$

    c. $f(x) = (3x + 4)^2$