

Name: Selected Answers

Date: _____

Homework: Unit 1 – Foundations

Honors PreCalculus

All homework must be completed NEATLY on your own paper.

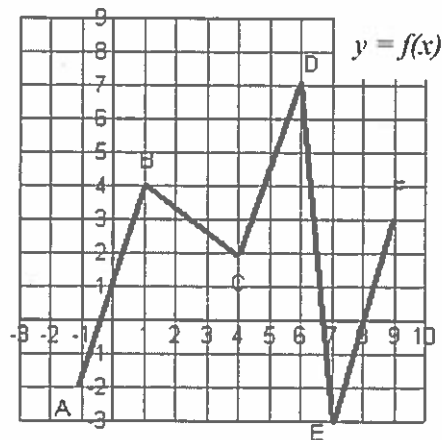
Homework 1.5: Graph Analysis

Use the graph of $y = f(x)$ to answer the questions below.

1. Find the values of x for which $f(x) = 2$.

$$x = 0.25, 4, 6.5, 8.75$$

2. For what interval(s) of x does f have a rate of change of 3? Explain your answer.



3. Identify the intervals over which the function $y = f(x)$ is increasing and over which the function is decreasing. Explain your reasoning.

4. Find the domain and range of the function $y = f(x)$.

5. Identify all extreme values and classify them as relative or absolute maximum/minimums.

Maximums: (1, 4) Relative, (6, 7) Absolute

Minimums: (4, 2) Relative, (7, -3) Absolute

6. Find the equation of the line segment through points D and E.

$$y = -10x + 67$$

7. Find the equation of the perpendicular bisector to \overline{BC} .

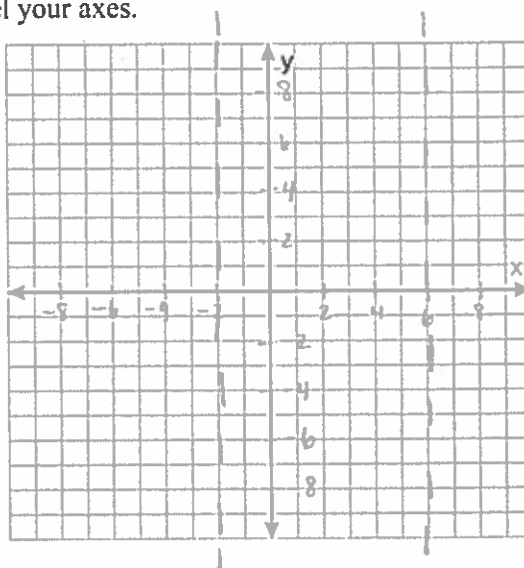
$$y = \frac{3}{2}x - \frac{3}{4}$$

8. Find the area of the region between $y = f(x)$ and the x-axis over the interval $1 \leq x \leq 6$.

$$\text{Total Area} = 18 \text{ units}^2$$

9. Graph the given piecewise function. Be sure to label your axes.

$$f(x) = \begin{cases} 5, & x < -2 \\ \frac{1}{2}x - 6, & -2 \leq x \leq 6 \\ 2x + 10, & x > 6 \end{cases}$$



Use Question #9 to find the following.

10. $f(-4) = 5$

11. $f(8) = 26$

12. $f(-2) = -7$