

Quiz #8 - Average Rate of Change

Name: _____ Class: _____

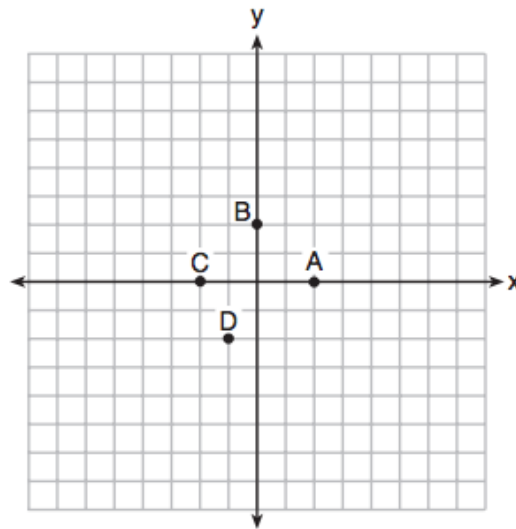
This must be handed in on time to receive any credit.

- 1.) Given the relation $D = \{(6, 4), (8, -1), (x, 7), (-3, -6)\}$, which of following values for x will make relation D a function? **(2 points)**

(A) -3 (B) -6 (C) 8 (D) 6

- 2.) The graph of $y = f(x)$ is shown. Which point could be used to find $f(2)$? **(2 points)**

(A) A (C) C
(B) B (D) D



Use the graph to answer questions 3 – 7.

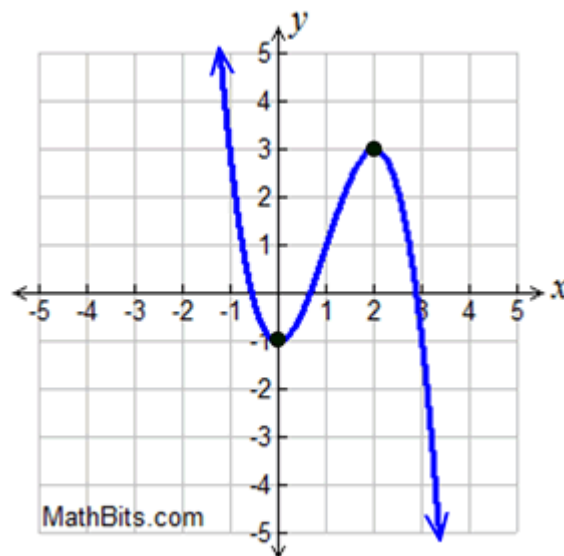
- 3.) Is the relation a function? Explain your reasoning. **(2 points)**

- 4.) What is the interval over which the function is increasing? **(2 points)**

- 5.) Find $f(-1)$. **(2 points)**

- 6.) Find all values of x in which $f(x) = 3$. **(2 points)**

- 7.) What is the coordinate of the relative minimum of this graph? **(2 points)**



8.) If $f(x) = x^2 - 2x + 9$, find,

a.) $f(4)$ **(2 points)**

b.) $f(-5)$ **(2 points)**

c.) $f(x - 8)$ **(3 points)**

9.) Find the average rate of change on the graph of $f(x) = x^2 + 4x + 1$ over the interval $-1 \leq x < 4$. **(3 points)**

10.) The table to the right shows the average diameter of a pupil in a person's eye as he or she grows older. What is the average rate of change of a person's pupil diameter from age 20 to age 80? Make sure to label the units. Provide an interpretation of this value. **(3 points)**

Age (years)	Average Pupil Diameter (mm)
20	4.7
30	4.3
40	3.9
50	3.5
60	3.1
70	2.7
80	2.3

11.) Write or draw an example of a relation that is not a function. Explain why it's not a function. **(3 points)**