



Algebra I Unit 8: Rate of Change

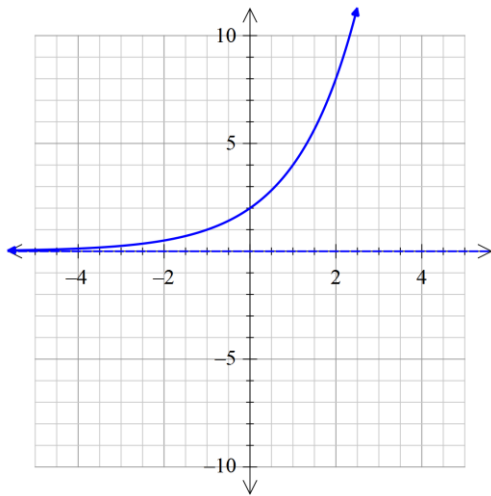
1. If the rate of change of miles per hour is a negative number, what does this mean?

- (A) The number of hours is decreasing for every mile that goes by
- (B) The number of miles is decreasing for every hour that goes by
- (C) The number of miles and the number of hours are both decreasing
- (D) None of the above

2. What is the rate of change for the line that passes through the points $(-4, 7)$ and $(-6, -5)$?

- (A) $\frac{1}{6}$
- (B) 6
- (C) $-\frac{1}{5}$
- (D) -5

3. Estimate the rate of change between the points $x = 0$ and $x = 2$ on the graph below.



- (A) 3
- (B) 4
- (C) 6
- (D) 8



4. Which of the following sets of points would create a linear function?

- (A) $(0, 5), (1, 4), (1, 3)$
- (B) $(-2, 1), (-1, 3), (0, 2)$
- (C) $(2, 5), (2, 6), (2, 7)$
- (D) $(-1, 7), (1, 3), (3, -1)$

5. What is the average rate of change for the line $y = 5x - 3$?

- (A) 5
- (B) -3
- (C) $-\frac{3}{5}$
- (D) $-\frac{5}{3}$

6. What determines how the slope will change between points on a graph of an exponential function?

- (A) Common difference
- (B) Common sum
- (C) Common factor
- (D) Common quotient

7. Using the table below, what is the average rate of change over the interval $[0, 2]$?

x	-1	0	1	2
y	$\frac{3}{4}$	$\frac{3}{2}$	3	6

- (A) $4\frac{1}{2}$
- (B) 2
- (C) $\frac{9}{4}$
- (D) $\frac{4}{9}$



8. You are given three points: (1, 3), (2, 6), (3, 12). The slope between (1, 3) and (2, 6) is 3 and the percent change is 100%. If these points are part of an exponential graph, what is the slope and percent change between (2, 6) and (3, 12)?

- (A) The slope is 6. The percent change is 100%.
- (B) The slope is 3. The percent change is 100%.
- (C) The slope is 6. The percent change is 300%.
- (D) The slope is 3. The percent change is 300%.

9. Which of these functions will have the greatest percent change as its x -values increase?

$$y = 5x + 9$$
$$y = 5^x$$

- (A) $y = 5x + 9$
- (B) $y = 5^x$
- (C) Both functions will have the same percent change as their x -values increase.
- (D) Neither function will have a percent change as their x -values increase.

10. In the long run, which investment account would be a better choice—one that follows an increasing exponential model or one that follows a linear model?

- (A) Increasing exponential model
- (B) Increasing linear model
- (C) I need more information to determine the answer.
- (D) Both accounts would end up with the same savings in the long run.