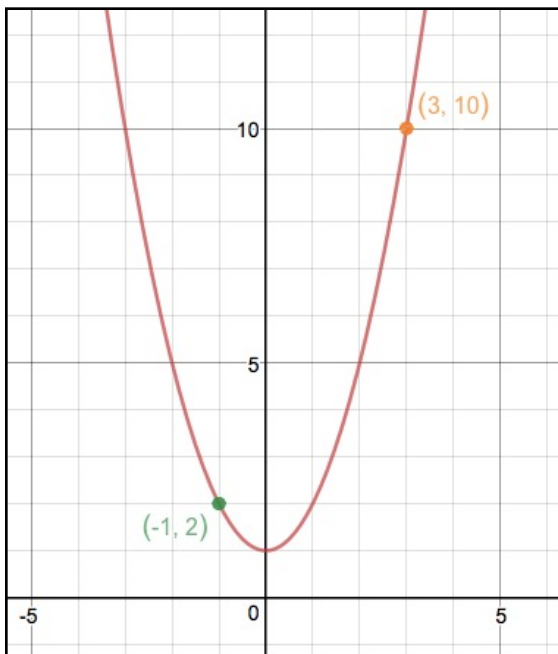
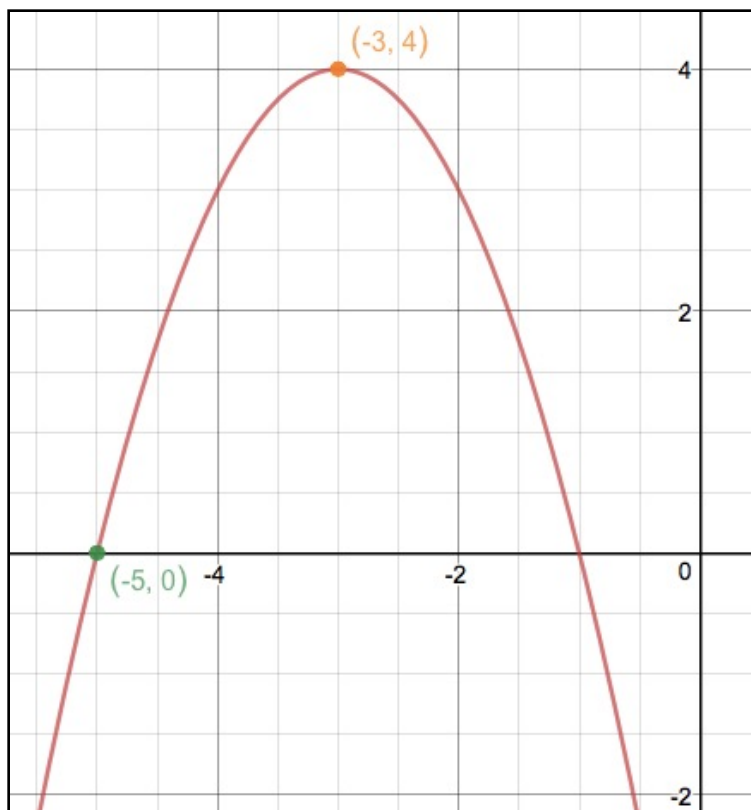


1. Look at the graph of $f(x) = x^2 + 1$. What is the average rate of change between $[-1, 3]$? Draw a line between the two points and explain what the rate of change that found means.



2. Look at the graph of $f(x) = -(x+3)^2 + 4$. What is the average rate of change between $[-5, -3]$?

Draw a line between the two points and explain what the rate of change that found means.



3. Look at the table below. What is the average rate of change between $[-1, 3]$?

x	y
-2	-22
-1	-11
0	-6
3	-27

4. Look at the table below. What is the average rate of change between $[-4, 4]$?

x	y
-4	16
-2	4
0	0
4	16

For the following functions, is the average rate of change greater between $x = -2$ and $x = 0$ or between $x = 0$ and $x = 2$?

5. $f(x) = \frac{1}{2}(x+2)^2 + 3$

6. $g(x) = -x^2 + 8x + 3$

7. $h(x) = 5x^2 - 6x + 4$

8. A drop of rain falls from a height of 1,400 feet above the ground. The function $h(t) = -16t^2 + 1400$ is used to model the raindrop's height, $h(t)$, in feet t seconds after it starts to fall. What is the raindrop's average rate of change 2 to 3 seconds after it falls? USE CORRECT UNITS

- 9 The table below gives the velocity of a skydiver t seconds into free fall.

Time in seconds	0	10	20	30	40	50	60
Velocity in fps	0	147	171	175	175.8	176	176

- A. Find the average rate of change of velocity for each ten second interval.
- B. During which interval was the average rate of change the highest?
- C. Use the average rate of change from 10 seconds to 20 seconds to approximate the skydiver's velocity 15 seconds into free fall.
- D. Use the average rate of change from 0 seconds to 10 seconds to approximate the skydiver's velocity 8 seconds into free fall.