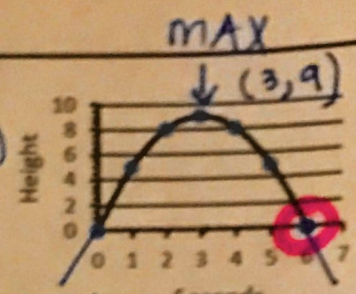
Unit 8- Quadratic Functions

Learning Target #3: Applications of Quadratics

15) The path of a rocket being launched from the ground is shown in the graph below, where $f(x)$ is the height of the rocket and x is the number of seconds that have passed since the rocket was fired.



Which of the following points show the maximum height of the rocket?

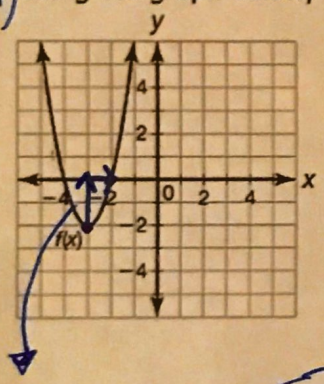
(a) (0, 0) (b) (3, 9)
(c) (6, 0) (d) (2, 8)

16) Using the graph from Question ~~#12~~ #15, how long does it take the rocket to hit the ground?

(a) 0 seconds (b) 3 seconds
(c) 6 seconds (d) 2 seconds

x_1 y_1 x_2 y_2
(−3, −2) (−2, 0)

17) Using the graph below, calculate the average rate of change on the interval $-3 \le x \le -2$.



(a) m = 2
(b) m = −2
(c) $m = -\frac{1}{2}$
(d) $m = \frac{1}{2}$

slope does change

ARoC = slope = $m = \frac{y_2 - y_1}{x_2 - x_1}$

$m = \frac{0-(-2)}{-2-(-3)}$

$\boxed{m = 2}$

$\frac{\text{up } 2}{\text{right } 1} = \frac{+2}{+1} = \boxed{2}$

→ slope of line does not change