

8.2 | Slope as Rate of Change May 5, 2016

Pg 408

#12. y x
960 m is 2.8 seconds (2.8, 960)

1680 m is 4.9 seconds (4.9, 1680)

a) Rate of Change for metres per second $\frac{m}{s}$

$$m = \frac{1680 - 960}{4.9 - 2.8} = \frac{720}{2.1} = 343 \text{ metres per second.}$$

c) Given time as 3.7 second. What is the distance?



$$d = (343)(3.7)$$

$$d = 1269.1 \text{ m}$$

d) Distance is 2500 m. What is the time?

$$t = \frac{2500}{343} = 7.3 \text{ seconds}$$

15. In 1961, May 3rd (1961, 123)

In 1998, June 27th (1998, 178)

a) Rate of Change for $\frac{\text{day}}{\text{year}}$

$$m = \frac{178 - 123}{1998 - 1961} = \frac{55}{37} = 1.5 \text{ days/year}$$

8.3 Point-Slope Form pg 418

Given a point and a slope, we can use:

$$y - y_1 = m(x - x_1)$$

to get the equation of a line

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

$$m(x_2 - x_1) = y_2 - y_1$$

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1. $(1, 2)$ $m = 5$

$$y - y_1 = m(x - x_1)$$

$$y - 2 = 5(x - 1)$$

$$y - 2 = 5x - 5$$

3. $(-4, 1)$ $m = 1$

$$y - y_1 = m(x - x_1)$$

$$y - 1 = 1(x + 4)$$

$$y - 1 = x + 4$$

8. $(-6, 8)$ $m = -\frac{3}{4}$

$$y - y_1 = m(x - x_1)$$

$$y - 8 = -\frac{3}{4}(\underline{x} + \underline{6})$$

$$y - 8 = -\frac{3}{4}x - \frac{18}{4}$$

$$\rightarrow y - 8 = -\frac{3}{4}x - \frac{9}{2}$$

Hw: pg 408 # 14, 16

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