

ROC Quiz Sample

Bruno still has 37 pages of AP Government to be read after he has been reading for 10 minutes, and 6 pages left after he has been reading for 52 minutes. Assume that the number of pages left to read varies linearly with the number of minutes he has been reading.

a. What is the rate of change?

$$m = \frac{6 - 37}{52 - 10} = \frac{-31}{42}$$

- .74 pages/min

$m = \frac{y_2 - y_1}{x_2 - x_1}$
 $y = mx + b$
 $x = \text{minutes}$
 $y = \text{\# pages}$

$(10, 37)$ $(52, 6)$
 x_1, y_1 x_2, y_2

b. Find the y-intercept and describe the value in context of this word problem.

$y = mx + b$
 $b = 44.4$
 $37 = (-.74)(10) + b$
 $37 = -7.4 + b$
 $b = 44.4$

The initial number of pages to read is 44.4 pages at time 0.

c. Write the equation that models the number of pages remaining to be read in terms of time.

$$y = -.74x + 44.4$$

d. How many pages still need to be read left after 27 minutes?

Solve for "y"

$$y = -.74(27) + 44.4$$

$$= 24.4 \text{ pages}$$

After 27 min, he has 24.4 pages left to read.

e. When will Bruno be finished reading the AP Government assignment?

Solve for "x"

$$y = -.74(x) + 44.4$$

$$0 = -.74x + 44.4$$

$$-44.4 = -.74x$$

$$\frac{-44.4}{-.74} = \frac{-.74x}{-.74}$$

$$x = 60 \text{ min}$$

It will take him 60 min to finish reading.