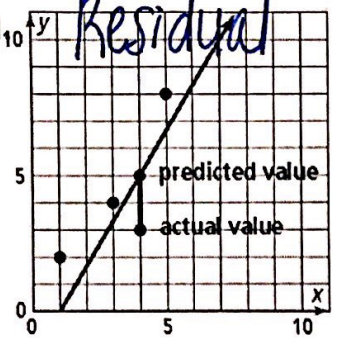
Topic 3 Quiz #1 (Lessons 3.1, 3.2, 3.5, & 3.6) Name Key

Choose the concept from the list that best represents the item in each box.

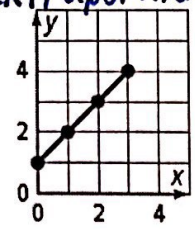
Interpolation	correlation coefficient	extrapolation	residual

1. Residual



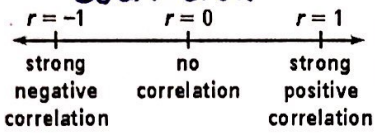
actual value − predicted value

2. Extrapolation

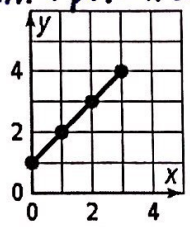


Estimate the value for y when $x = 3.5$.

3. Correlation coefficient

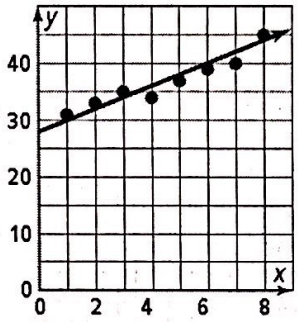


4. Interpolation



Estimate the value for y when $x = 1.5$.

2. View the scatter plot and the trend line. Fill in the blanks to determine the equation for the trend line.



Select two points on the trend line. (1, 31) and (6, 39)

Use them to find the slope. $m =$ 1.6 $m = \frac{39-31}{6-1} = 1.6$

Use the slope and the first point from above to write the equation of the trend line. $Y =$ 1.6x + 29.4

$y - 31 = 1.6(x-1)$ ← pt-slope

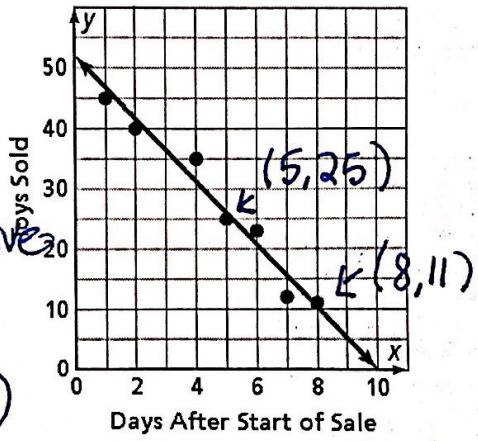
$y - 31 = 1.6x - 1.6$

$y = 1.6x + 29.4$ ← slope-intercept

Fill in the blanks to complete each statement about the linear regression. Round to the nearest tenth if necessary.

3. The parameters of the linear model found in the linear regression are the slope, −4.7, and the y-intercept, 48.5 (0, 48.5)
The equation of the best fit line is $y =$ $y = -4.7x + 48.5$

4. Brian made statements about the line of best fit for the scatter plot data shown. Put an X next to any incorrect statements. Correct his error(s).



X a. The correlation coefficient is positive because the data show a strong correlation. strong, negative

X b. Using extrapolation, no toys will be sold on the tenth day. $y = -4.7(10) + 48.5$ $y = 1.5$ 1 toy will be sold

X c. The parameters of the line of best fit are a slope of −5 and a y-intercept of 52. slope of −4.7, (0, 48.5)

X d. Using interpolation, about 37 toys will be sold on the third day.

$y = -4.7(3) + 48.5$

$y = 34.4$

About 34 toys sold on 3rd day

$m = \frac{25-11}{5-8}$ $m = \frac{-14}{3}$ $m = -4.7$

$y = mx + b$

$25 = -4.7(5) + b$

$48.5 = b$