

9.2 Line of Best Fit

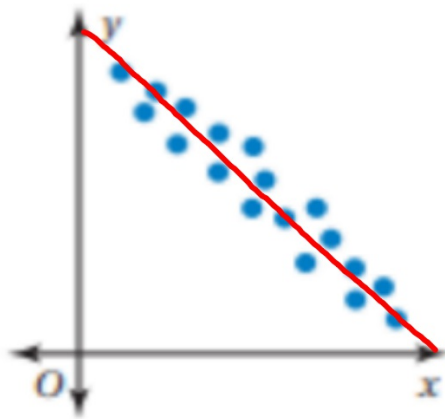
- Make a Scatter Plot
- Draw a Line of Best Fit

using a 



- Write an Equation for the Line $y = mx + b$
- Interpret the Slope
- Interpret the y-intercept
- Make Predictions

Line of "BEST FIT"



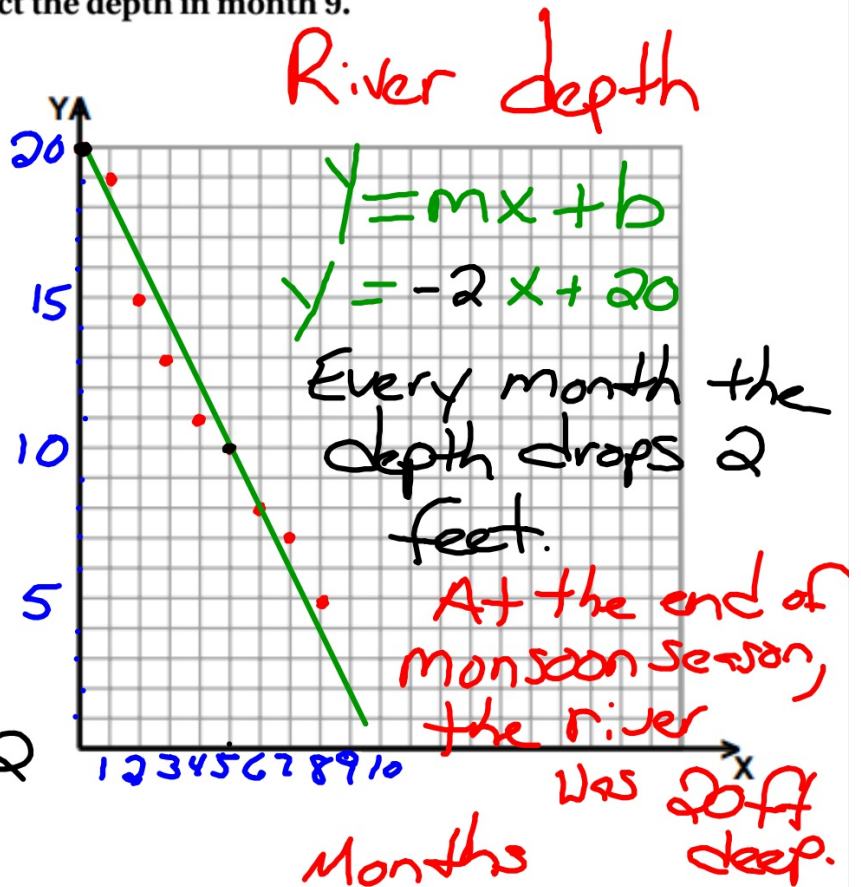
The table shows the depth of a river x months after a monsoon season ends. (a) Make a scatter plot of the data and draw a line of fit. (b) Write an equation of the line of fit. (c) Interpret the slope and the y -intercept of the line of fit. (d) Predict the depth in month 9.

| Month, | Depth (feet), |
|--------|---------------|
| x | y |
| 0 | 20 |
| 1 | 19 |
| 2 | 15 |
| 3 | 13 |
| 4 | 11 |
| 5 | 10 |
| 6 | 8 |
| 7 | 7 |
| 8 | 5 |

depth (feet)

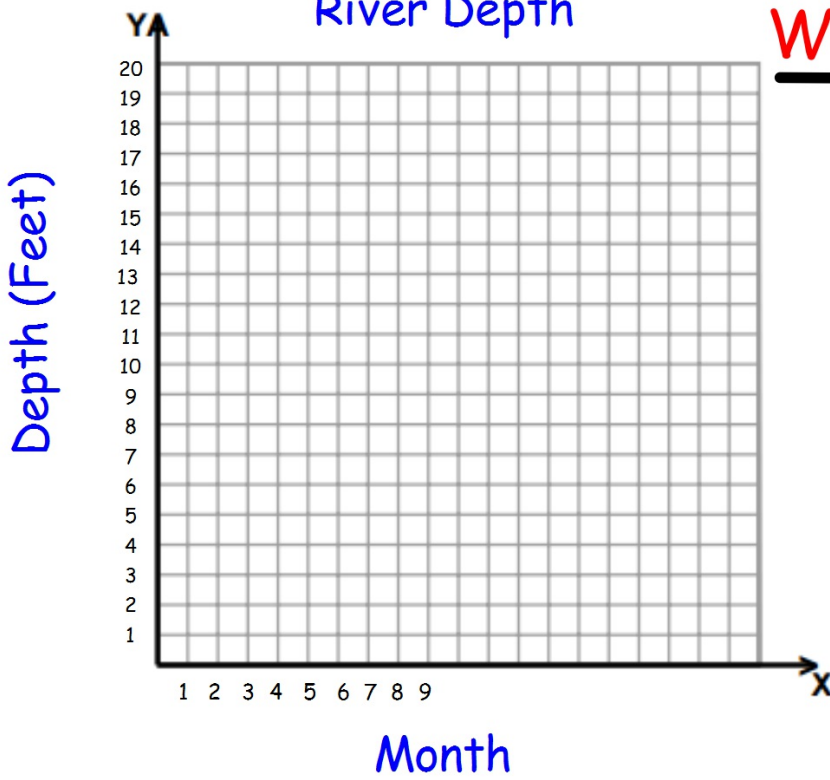
$(0, 20)$ $(5, 10)$

$$m = \frac{\Delta y}{\Delta x} = \frac{-10}{5} = -2$$



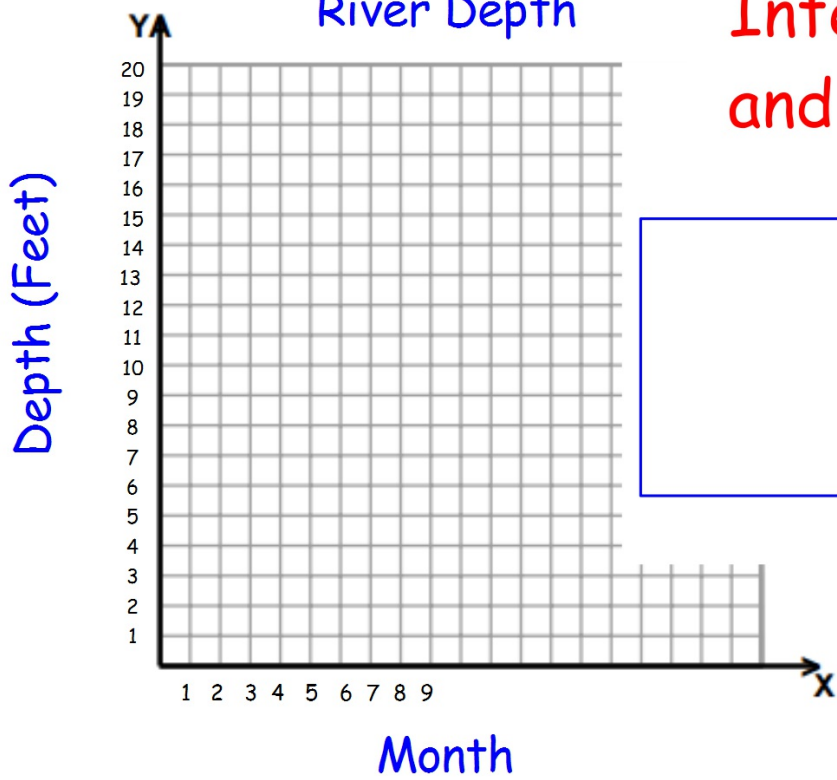
River Depth

Write an Equation



River Depth

Interpret the Slope and y-intercept



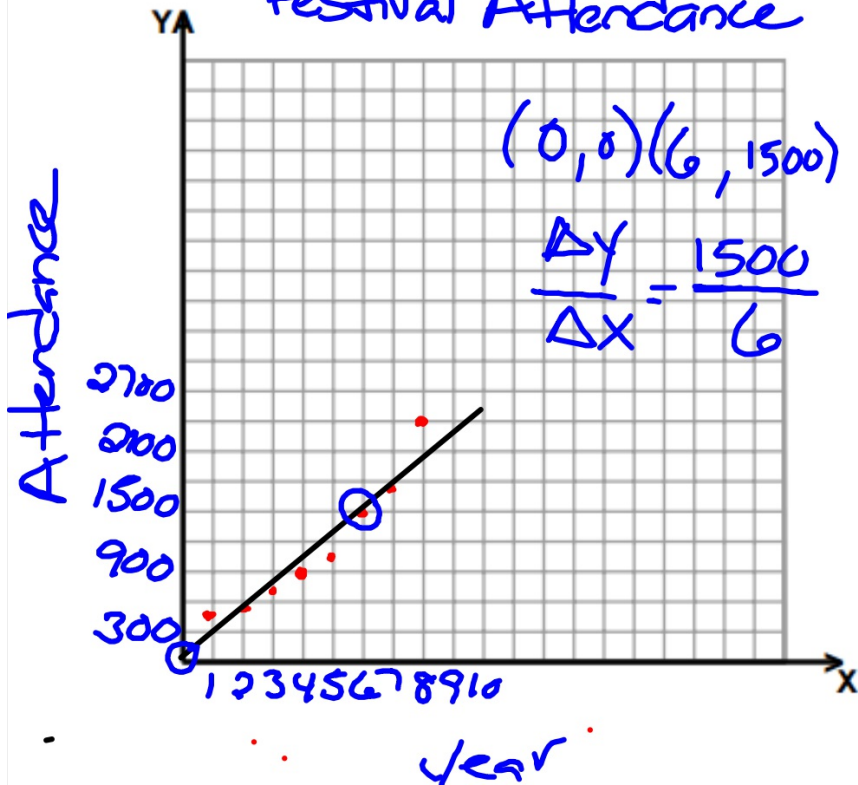
Predict the depth after 9 months.

Use the equation of the line:

The table shows the numbers of people who have attended a festival over an 8-year period. (a) Make a scatter plot of the data and draw a line of fit. (b) Write an equation of the line of fit. (c) Interpret the slope and the y-intercept of the line of fit. (d) Predict the number of people who will attend the festival in year 10.

| Year, x | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|-----|-----|-----|-----|------|------|------|------|
| Attendance, y | 420 | 500 | 650 | 900 | 1100 | 1500 | 1750 | 2400 |

Festival Attendance



$$y = mx + b$$

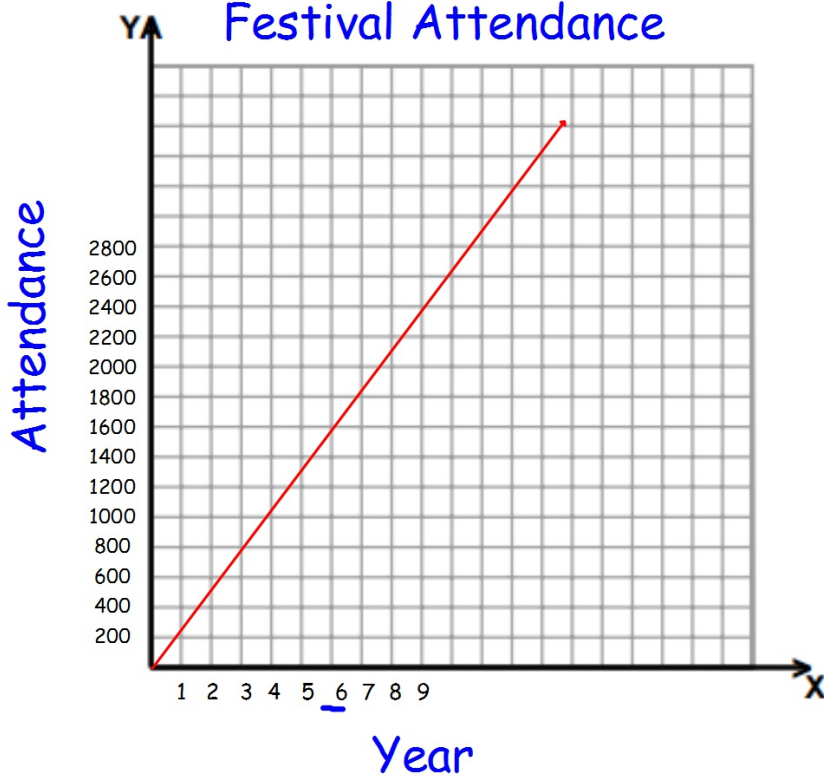
$$y = 250x + 0$$

Every year attendance increases 250 people.

Before year 1 attendance was zero.

Festival Attendance

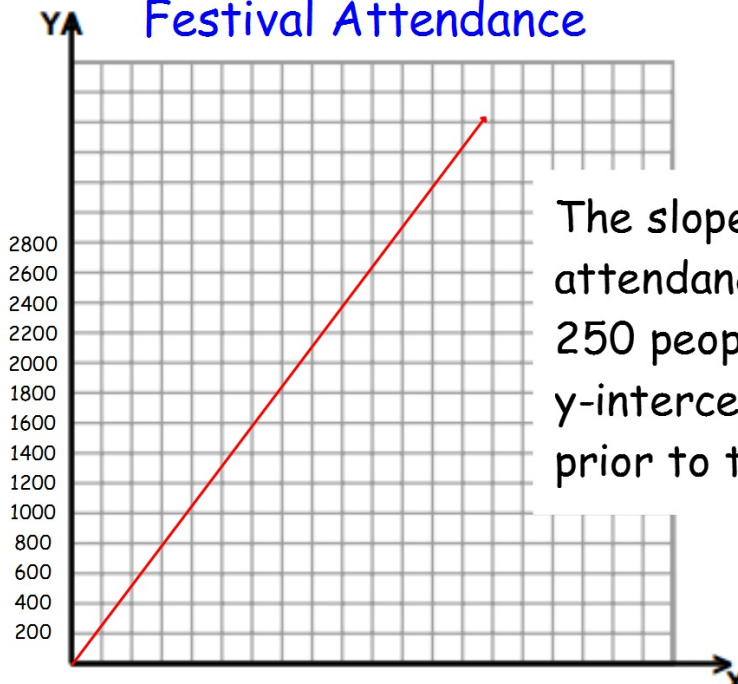
Write an Equation



Festival Attendance

Interpret the Slope and y-intercept

Attendance



The slope shows that the attendance increased by about 250 people each year. The y-intercept shows that in the year prior to this 8 year period was 0.

Predict the number of people who will attend in year 10.

Hw
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