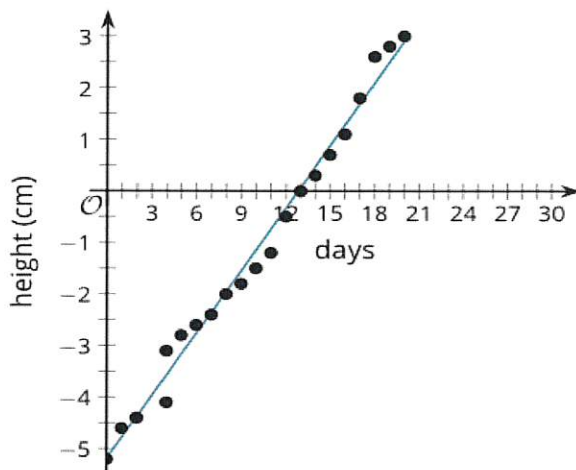


Unit 5 Pre-Assessment: 2-Variable Statistics

1.

A seed is planted in a glass pot and its height is measured in centimeters every day.



The best fit line is given by the equation $y = 0.404x - 5.18$, where y represents the height of the plant above ground level, and x represents the number of days since it first sprouted.

- a. Is this an example of a **positive** association or a **negative** association? Explain your reasoning.

This is a positive association because the line slopes upwards.

- b. Is this an example of a **strong** or **weak** correlation? Explain your reasoning.

This is a strong correlation because the dots are all very close to the line.

- c. What is the slope of the line of best fit AND what does it tell you about the plant?

The slope is 0.404, which means the plant grows 0.404 cm per day, on average.

- d. What is the y-intercept of the line of best fit AND what does it tell you about the plant?

The y-intercept is -5.18, which means the plant started out 5.18 cm below the surface (it was planted underground).

- e. Use the equation to calculate the x-intercept of the line of best fit. Describe what the x-intercept tells you about the plant.

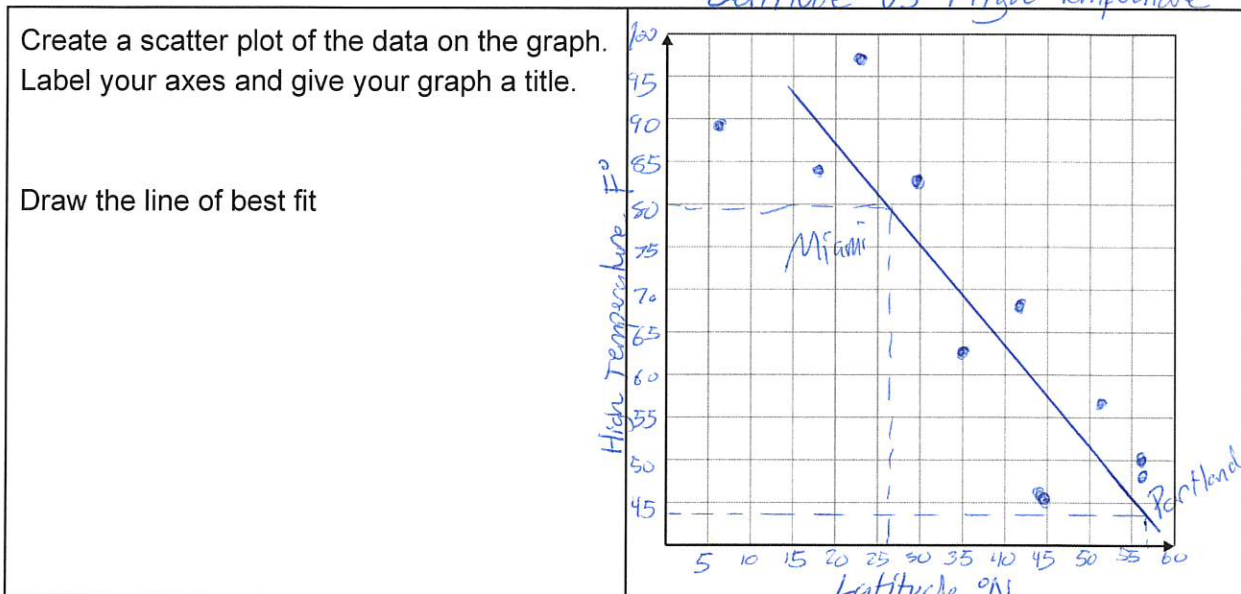
$$\begin{aligned} 0 &= 0.404x - 5.18 \\ +5.18 & \quad +5.18 \\ 5.18 &= 0.404x \end{aligned}$$

$12.82 = x$
 The plant will reach ground level after 12.82 days (it will sprout)

2. The table below shows the relationship between the latitude and average high temperature in April for 10 cities around the world.

City	North Latitude	April Average High Temp
Lagos, Nigeria	6	89
San Juan, Puerto Rico	18	84
Calcutta, India	23	97
Cairo, Egypt	30	83
Tokyo, Japan	35	63
Rome, Italy	42	68
Belgrade, Yugoslavia	45	45
London, England	52	56
Copenhagen, Denmark	56	50
Moscow, Russia	56	47

Latitude vs High Temperature



Is this an example of **positive** or **negative** association? Explain your answer.

Negative because the line goes down

Is this an example of **strong** or **weak** association? Explain your answer.

The association is somewhat strong because the data are close to the line.

Miami, Florida, is at a latitude of 25.76°N. Use the graph to predict its average temperature in April.

The graph predicts 80°F

Portland has an average temperature in April of 43°. Use the graph to approximate its latitude.

The graph predicts 56°N