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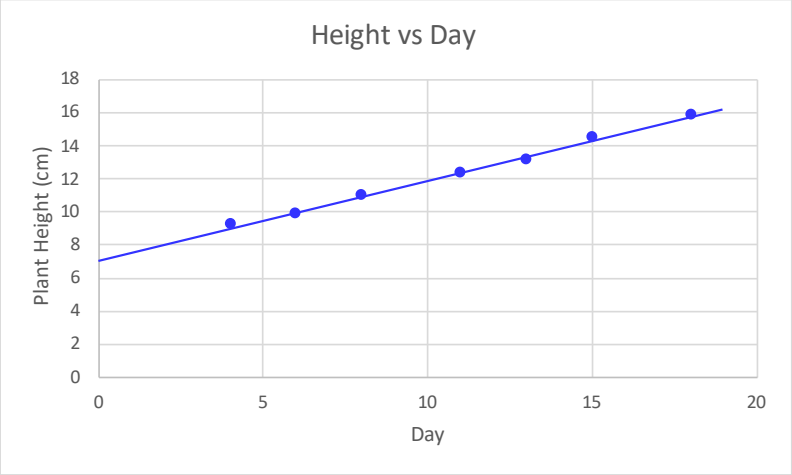
Linear Approximation Entrance Ticket Answer Key

Exact student answers will vary. An example solution is provided.

The data in the table below shows how the height of a plant changed over time.

Day	Height (cm)
4	9.2
6	9.9
8	11
11	12.3
13	13.1
15	14.5
18	15.8



Find the equation of a line that you think best follows the data. Show your work or include a justification of the values for your equation.

Students should plot the data and draw a line of best fit. Check that students label the axes.

Select two points to find the slope: (0,7) and (11,12.3).

Slope = $\frac{y_2-y_1}{x_2-x_1} = \frac{12.3-7}{11-0} = 0.48\ {}^{cm}/_{day}$

The point (0,7) gives the y-intercept.

Slope-intercept form equation: $y = 0.48x + 7$

Where y is the height of the plant (cm) and x is day.

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Use your equation to determine how tall the plant will be after 25 days? Show work.

Let $x = 25\ days$
$y = 0.48\ (25) + 7 = 19\ cm$