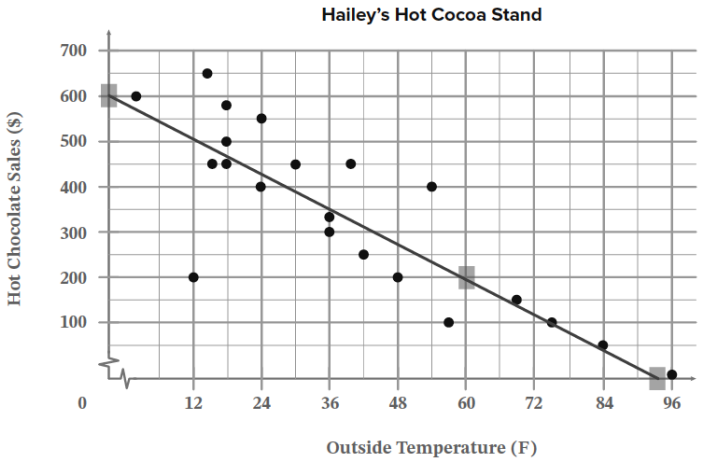
1.

Sample: This is a strong negative correlation. The colder it is outside, the more hot chocolate sales increase. Or, as temperatures increase, the sale of hot chocolate decreases. This is because when it is very hot outside most people prefer cold drinks over hot drinks.

2.

This graph shows no correlation. The height of a student and how long they study has no relationship.

3.



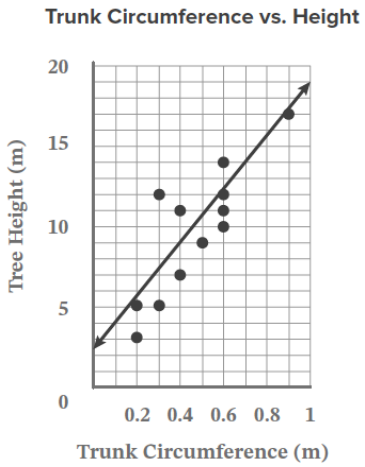
4.

Sample: Sales would be around $200 because the ordered pair (60, 200) falls very close to the line.

5.

Sample: Sales would likely be $0 because it is nearly $0 when it is 96°F, and 100°F is even warmer so less hot cocoa is likely to be sold.

6.



7.
The scatter plot has strong positive correlation. The correlation shows that as the trunk circumference increases, the height of the tree increases.
(Note that *weak* and *strong* can be subjective without the correlation coefficient. If your student says the correlation is weak, have them explain their reasoning. *Positive* is the key word here.)

8.
(circumference, height) Student work should have the two points they used listed before they begin calculations.
Technology calculated regression line: $y = 15.70x + 2.41$ rounded to the hundredth
This equation is the computer calculated regression line. Your student should have a slope and y-intercept close to these values.

9.
The slope of 15.7 (rounded) shows that for every 15.7 meters in height, the circumference of the tree is 1 meter around.

10.
A.
Using $y = 15.7x + 2.4$
$(0.8, y)$
$y = 15.7(0.8) + 2.4$
$y = 14.96$
This is interpolation because you could estimate the height between already graphed data and the line of best fit.

B.
$(x, 30)$
$30 = 15.7x + 2.4$
$27.6 = 15.7x$
$x = 1.75796$
$x = 1.8$
This is extrapolation because 30 is not on the graph, so you can only use the equation to find the value.