**Shadows** On sunny days, every vertical object casts a shadow that is related to its height. The following graph shows data from measurements of flag height and shadow location, taken as a flag was raised up its pole. As the flag was raised higher, the location of its shadow moved farther from the base of the pole. Although the points do not all lie on a straight line, the data pattern can be closely approximated by a line.

1. Use the data to make a scatterplot and then draw the line of best fit.

Flag Height in Feet	4	6	9	10	12	15	20
Shadow Location in feet	1	2	4	5	7	10	14
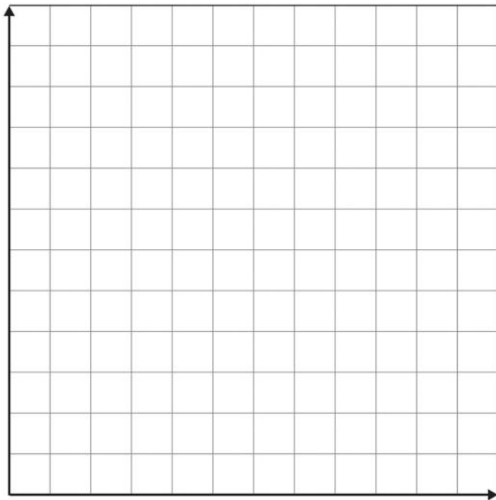
1.   Consider the (*flag height, shadow location*) data plotted above.   Write a rule in point slope form and then rewrite the equation in slope-intercept form.

a.   Use the rule to answer the following questions.

i.   What shadow location would you predict when the flag height is 11 feet?

ii.   What shadow location would you predict when the flag height is 30 feet?

iii.   What flag height would locate the flag shadow 4.5 feet from the base of the pole?

iv.   What flag height would locate the flag shadow 9 feet from the base of the pole?