Consumer Math   Name_____

Extra practice with scatterplots
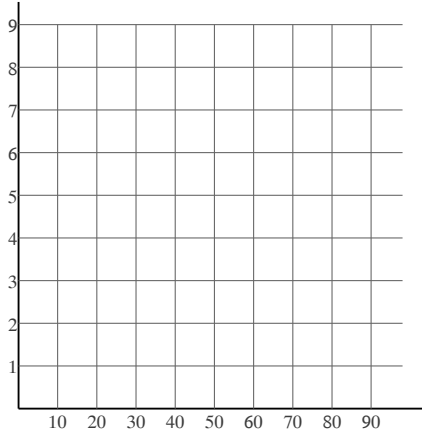
Date_____

Directions:

a) Construct a scatter plot.
b) State if there appears to be a positive correlation, negative correlation, or no correlation.
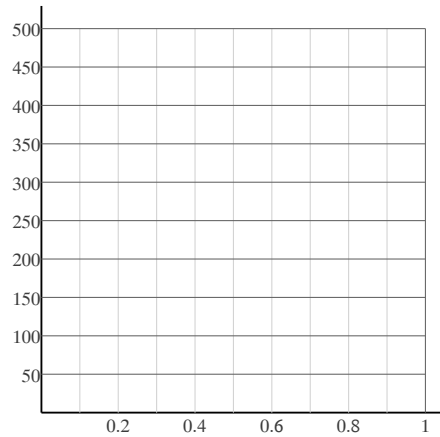**c) When there is a correlation, sketch in a line of best fit.**

1)

X	Y
9	9
20	8

X	Y
29	7
35	6

X	Y
96	2
98	2

2)

X	Y
0.12	200
0.13	100
0.35	300

X	Y
0.71	400
0.82	500
0.9	500

3)

X	Y
2.8	0.6
3.3	0.6

X	Y
7.2	0.3
8.2	0.3

X	Y
9.3	0.3
10.6	0.1
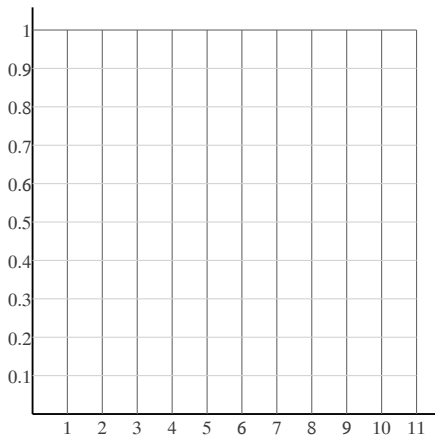
4)

X	Y
10	15
140	25

X	Y
500	50
600	51

X	Y
940	79
960	76
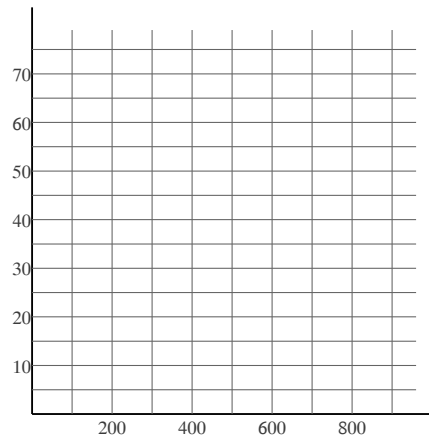
5)

X	Y		X	Y
100	10		7,200	70
3,100	30		7,300	70
3,500	40		10,000	90
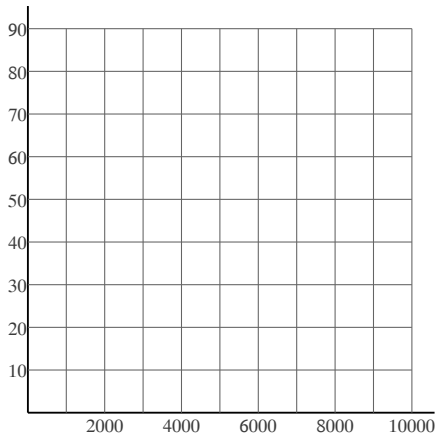
6)

X	Y		X	Y		X	Y
200	0.5		600	0.1		700	0.4
500	0.5		700	0.3		700	0.9
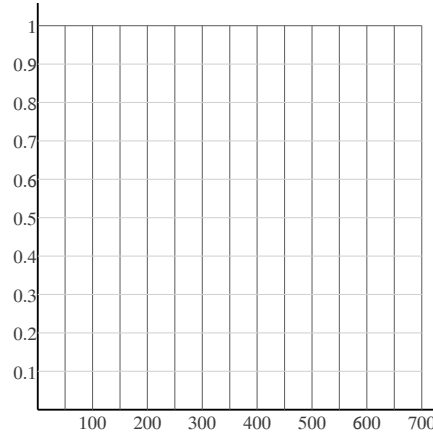
7)

X	Y		X	Y
700	8,500		4,200	9,800
1,100	900		4,300	500
4,000	3,700		5,200	5,600
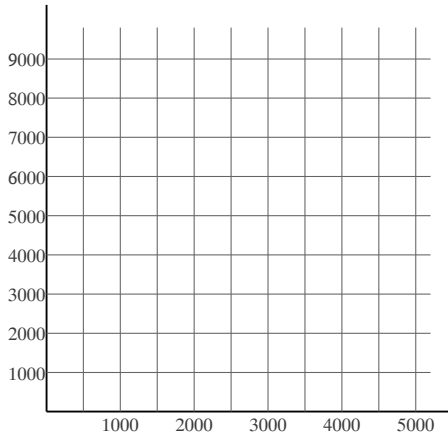
8)

| X	Y		X	Y
1,000	50		6,000	20
2,000	50		8,000	20
5,000	30		10,000	10
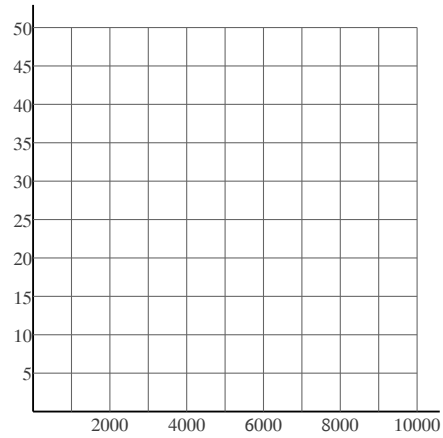
Directions:

a) Use the regression equation to estimate a missing value.
b) State if the estimated value is an interpolation or an extrapolation.

9) The height and weight of adults can be related by the equation $y = 49.5x - 133$ where x is height in feet and y is weight in pounds.
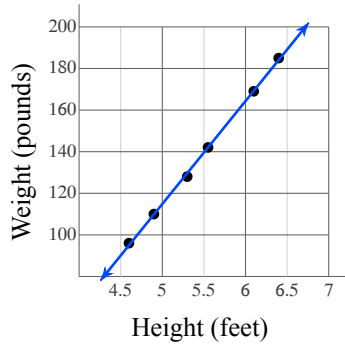

According to the model, what would be the weight of someone who is 7 ft tall? Round your answer to the nearest tenth.

10) The cost of a flight is related to the length of the flight by $y = 0.0915x + 28.2$ where x is distance in miles y is cost in dollars.
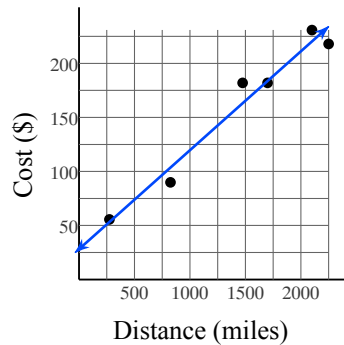

According to the model, how much would a 3725-mile flight cost? Round your answer to the nearest dollar.

11) The number of nickels from a particular year found in a sample of 1,000 is related to the number of nickels that were minted that year. This can be expressed as $y = 2.37x - 4.58$ where x is the number of nickels minted in a particular year in hundreds of millions and y is the number of nickels from that year in a sample of 1,000.


Minted (100 million)
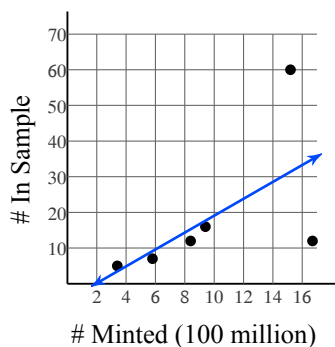
Using this model, in a sample of 1,000 nickels how many would you expect to be from a year in which 12.9 hundred million were minted? Round your answer to the nearest whole number.

12) The average amount of electricity consumed by a household in a day is strongly correlated to the average daily temperature for that day. This relationship is given by $y = 0.471x + 5.94$ where x is the temperature in °F and y is the amount of electricity consumed in kilowatt-hours (kWh).
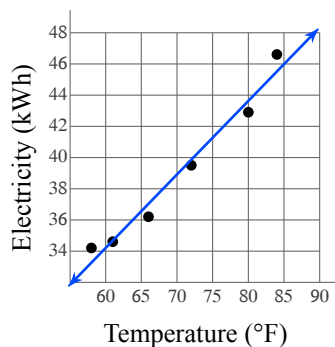
Temperature (°F)

Using the model, how much electricity would be consumed if the average daily temperature was 76°F? Round your answer to the nearest kilowatt-hour.

13) The cost of a flight is related to the length of the flight by $y = 0.0884x + 25.5$ where x is distance in miles y is cost in dollars.


Distance (miles)
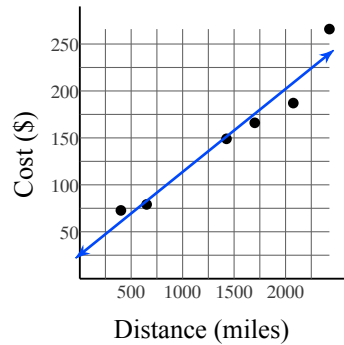
Using this model, what would be the cost of a flight that travels 1175 miles? Round your answer to the nearest dollar.

14) Scientists have steadily increased the amount of grain that farms can produce each year. The yield for farms in the Philippines is given by $y = 47.7x - 92900$ where x is the year and y is the grain yield in kilograms per hectare (kg/ha).
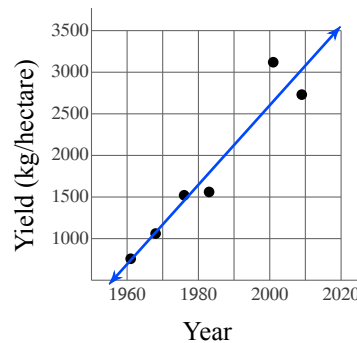

Year

Assuming that this trend continues, what crop yield is predicted for the year 2026 by the model? Round your answer to the nearest whole number.

15) There is a close relationship between the air pressure inside a hurricane and its maximum sustained wind speed: $y = -1.11x + 1140$ where x is the air pressure in millibars (kPa) and y is the wind speed in knots (nautical miles per hour).
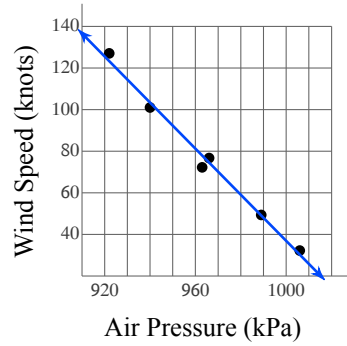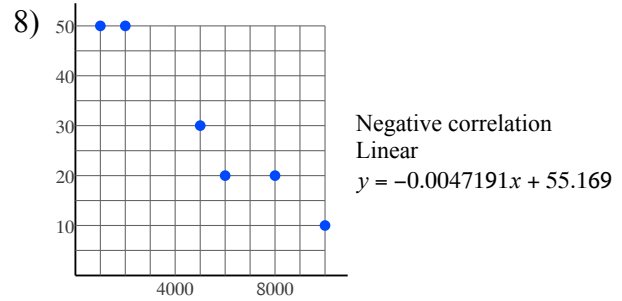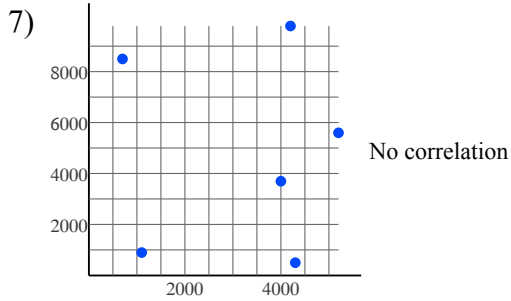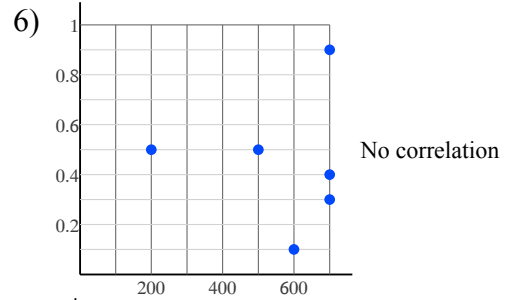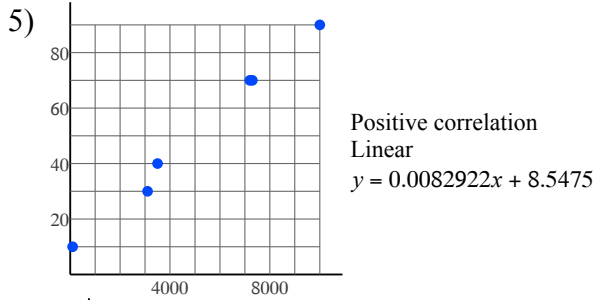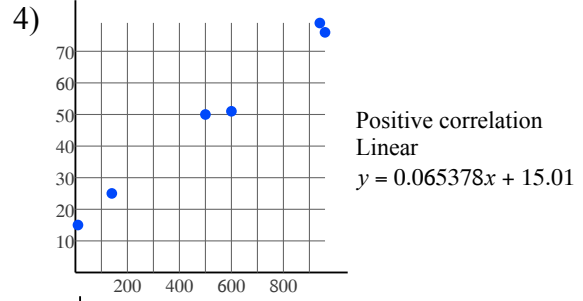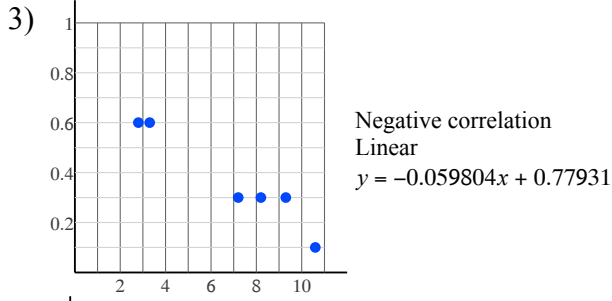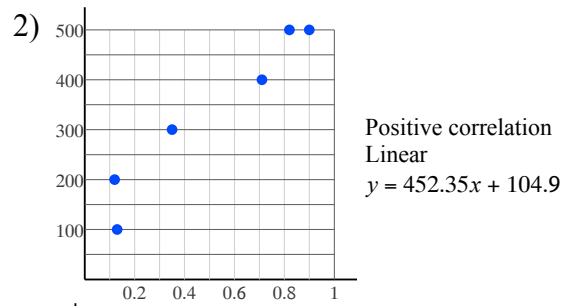

Air Pressure (kPa)

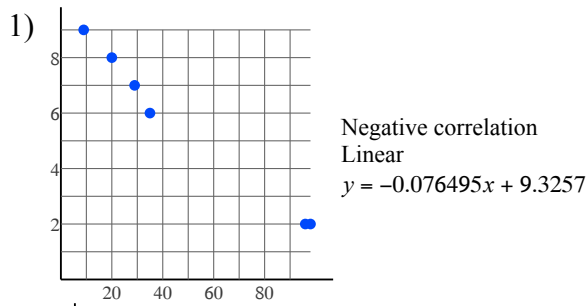According to the model, a hurricane with an air pressure of 865 kPa would have what wind speed? Round your answer to the nearest knot.

16) The height and weight of adults can be related by the equation $y = 51x - 143$ where x is height in feet and y is weight in pounds.

Height (feet)
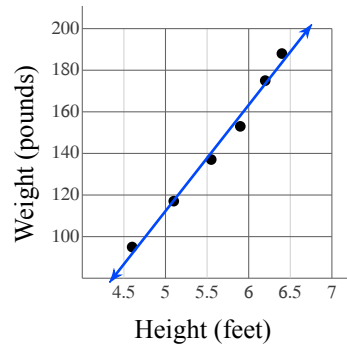
Using this model, what would be the weight of someone who is 4.95 ft tall? Round your answer to the nearest tenth.

Answers to Extra practice with scatterplots

1)

Negative correlation
Linear
$y = -0.076495x + 9.3257$

2)

Positive correlation
Linear
$y = 452.35x + 104.9$

3)

Negative correlation
Linear
$y = -0.059804x + 0.77931$

4)

Positive correlation
Linear
$y = 0.065378x + 15.01$

5)

Positive correlation
Linear
$y = 0.0082922x + 8.5475$

6)

No correlation

7)

No correlation

8)

Negative correlation
Linear
$y = -0.0047191x + 55.169$

9) 213.5 lbs

10) $369

11) 26 nickels

12) 42 kWh

13) $129

14) 3,740 kg/ha

15) 180 knots

16) 109.5 lbs