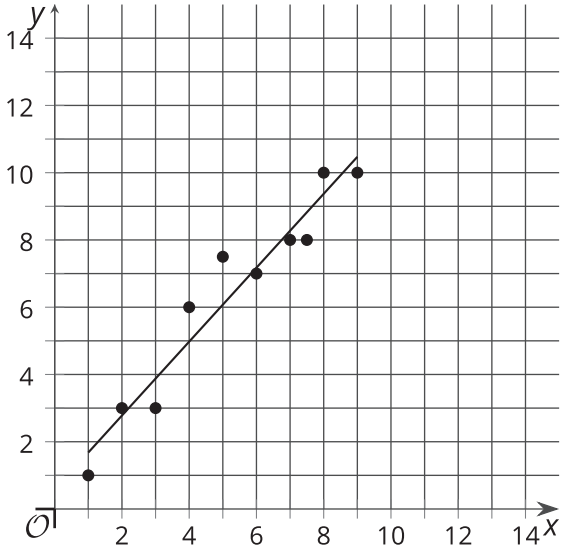
Lesson 10: Putting It All Together

- Let's interpret data

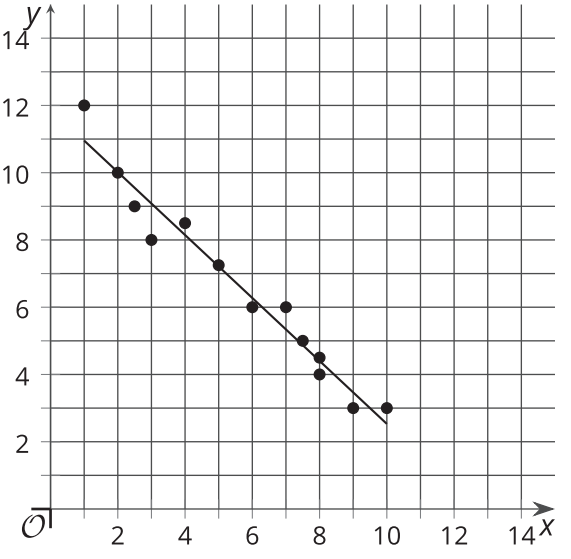
10.1: Which One Doesn't Belong: Data Correlations

Which one doesn't belong?

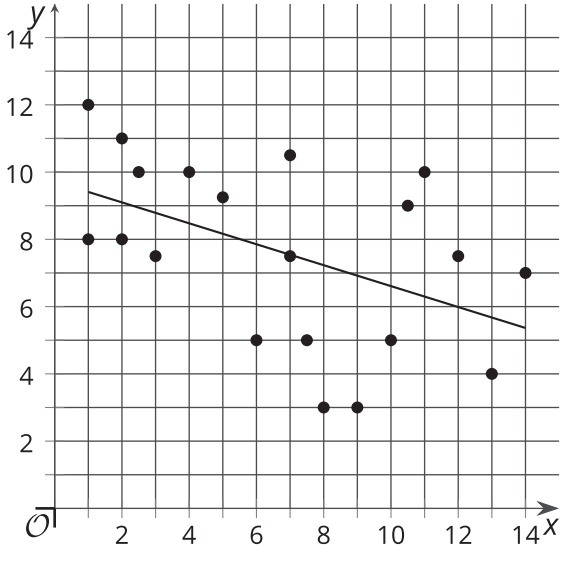
A



B



C



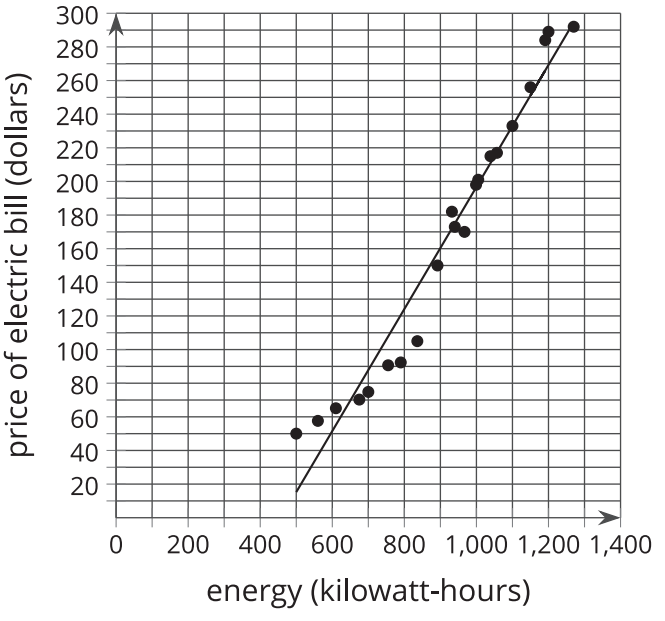
D

x	y
3	6
3.75	8.50
7.25	7.50
5.50	11
6	9
8	10.25

10.2: Electric Power

Here are Elena's representations of the data set.

energy (kWh)	electric bill price (dollars)	energy (kWh)	electric bill price (dollars)
500	50	967	170
560	57.60	999	198
610	65.10	1,005	201.22
675	70.25	1,039	215.35
700	74.80	1,057	217
755	90.66	1,100	233
790	92.34	1,191	284.62
836	105	1,150	256.98
892	150	1,200	289.60
940	173	1,270	292
932	182		



After analyzing the data, Elena concludes:

1. An estimate for the correlation coefficient for the line of best fit is $r = -0.98$.
2. Energy consumption and the price of electric bills have a positive relationship.
3. Energy consumption and the price of electric bills have a weak relationship.
4. Using the linear model, the electric bill is \$260 when 1,200 kWh are consumed.

What parts of Elena's interpretation of the data do you agree with and what parts do you disagree with? Explain your reasoning.

10.3: Confident Players

Before Diego's game, his coach asked each of his players, "On a scale of 1–10, how confident are you in the team winning the game?" Here is the data he collected from the team.

players	confidence in winning (1–10)	number of points scored in a game
Player A	3	2
Diego	6	10
Player B	10	2
Player C	4	10
Player D	7	13
Player E	5	6
Player F	8	15
Player G	4	3
Player H	9	15
Player I	7	12
Player J	1	0
Player K	9	14
Player L	8	13
Player M	5	8

1. Use technology to create a scatter plot, a line of best fit, and the correlation coefficient.

2. Is there a relationship between players' level of confidence in winning and the amount of points they score in a game? Explain your reasoning.

3. How many points does the linear model predict a player will score when his or her confidence is at a 4?

4. Which players performed worse than the model predicted?

5. Did Diego score better or worse than the linear model predicts?