

Name _____

Predict the future!

Using the data below, find the best-fit line and then predict what the future will hold based on the scatter plot. When finished, answer the questions.

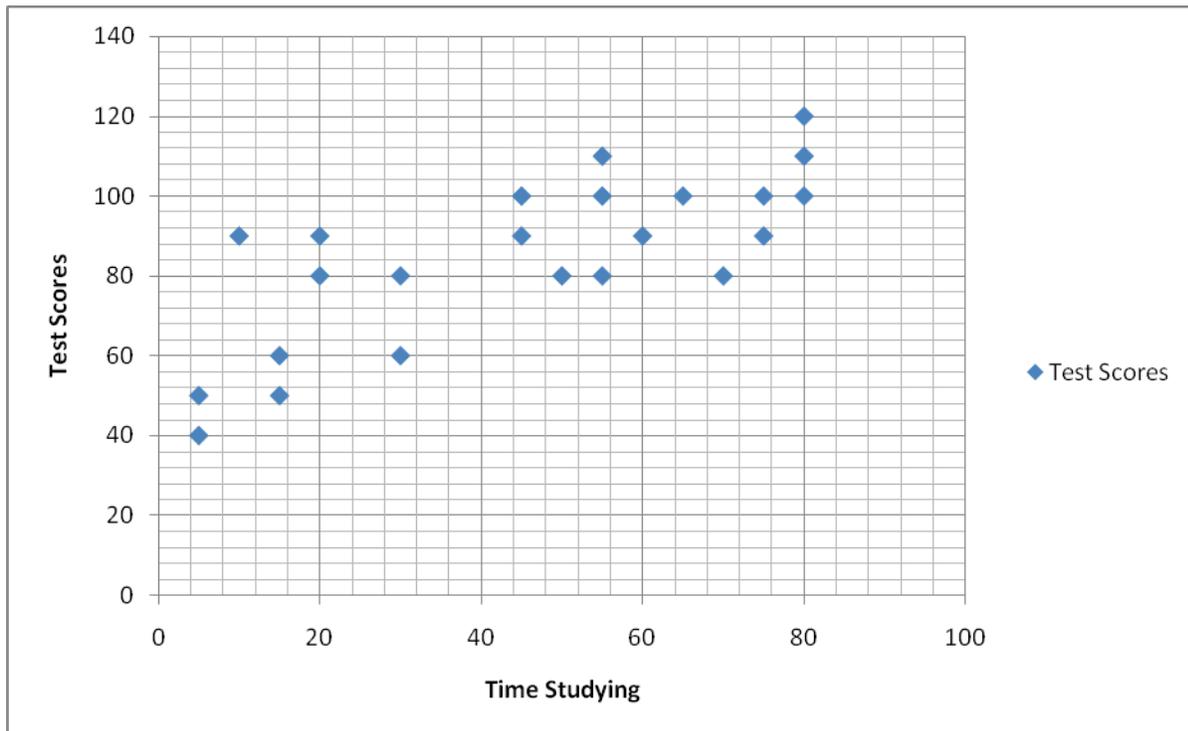
A. Test scores vs. Time spent studying: (X-axis = time studying; Y-axis = test score)

X	5	5	10	15	15	20	20	30	30	45	45	50	55	55	55	60	65	70	75	75	80	80	80
Y	40	50	90	50	60	80	90	60	80	90	100	80	80	100	110	90	100	80	90	100	100	110	120

- Best-fit line equation: _____
- Draw a best-fit line on the graph below. How does it compare to the equation from #1?

- Based on this scatter plot, what can you say about study time and test scores?

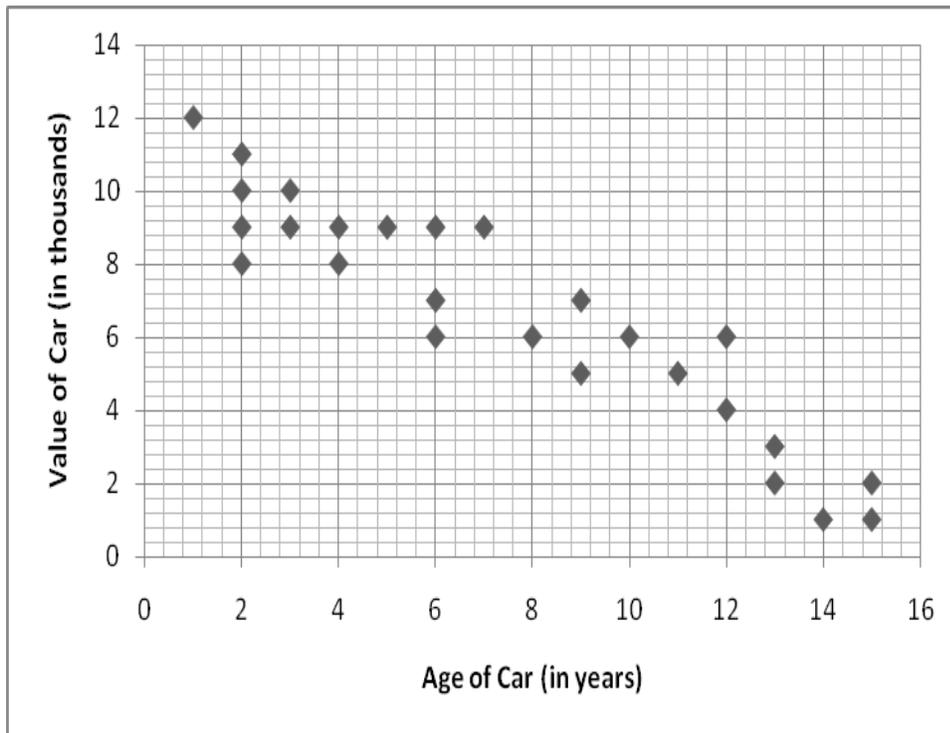
- Based on the best-fit line equation above, what would you predict would be the score for someone who studies for
 - 60 minutes? _____
 - 45 minutes? _____
 - 30 minutes? _____
 - 67 minutes? _____



B. Value of car vs. Age of car (X-axis = Age of car (years); Y-axis = Value of car in thousands)

x	1	2	2	2	2	3	3	4	4	5	6	6	6	7	8	9	9	10	11	12	12	13	13	14	15	15
y	12	8	9	10	11	9	10	8	9	9	6	7	9	9	6	5	7	6	5	4	6	2	3	1	1	2

1. Best-fit line equation: _____
2. Draw a best-fit line on the graph below. How does it compare to the equation from #1? _____
3. Based on this scatter plot, what can you say about the relationship between the age of a car and its value? _____
4. Based on the best-fit line equation above, what would you predict would be value of a car:
 - a. 6 years old? _____
 - b. 11 years old? _____
 - c. 13 years old? _____
 - d. 17 years old? _____



1. What careers can you think of that could use best fit-lines in their line of work? (Name at least 3)
 - a. _____
 - b. _____
 - c. _____
2. How could these careers use the best-fit lines? (Be specific)
 - a. _____
 - b. _____
 - c. _____
3. What have you learned about best-fit lines that you didn't know before this lesson?

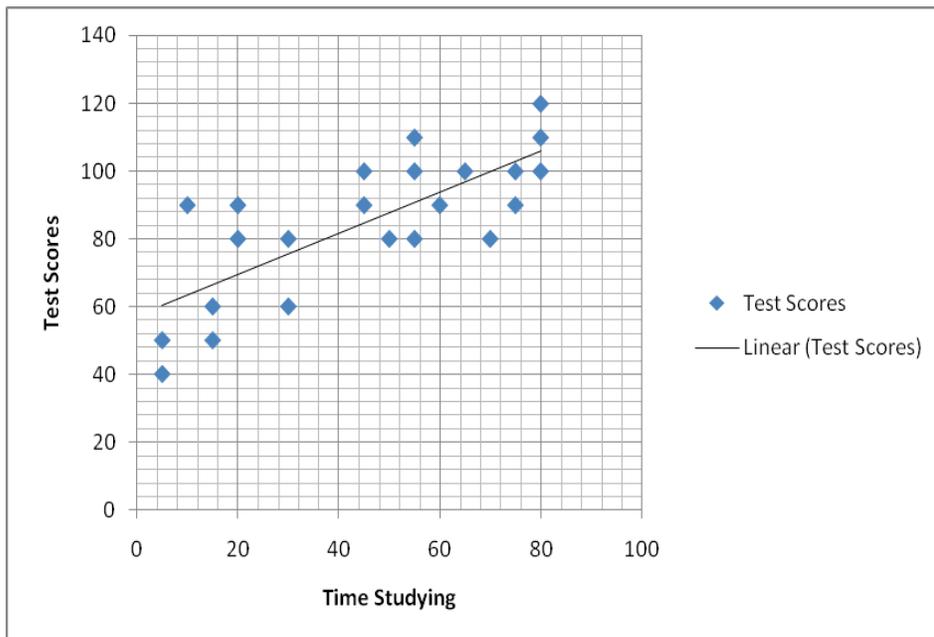
Predict the future! (ANSWER KEY)

Using the data below, find the best fit line and then predict what the future will hold based on the scatter plot. When finished, answer the questions.

A. Test scores vs. Time spent studying: (X-axis = time studying; Y-axis = test score)

X	5	5	10	15	15	20	20	30	30	45	45	50	55	55	55	60	65	70	75	75	80	80	80
Y	40	50	90	50	60	80	90	60	80	90	100	80	80	100	110	90	100	80	90	100	100	110	120

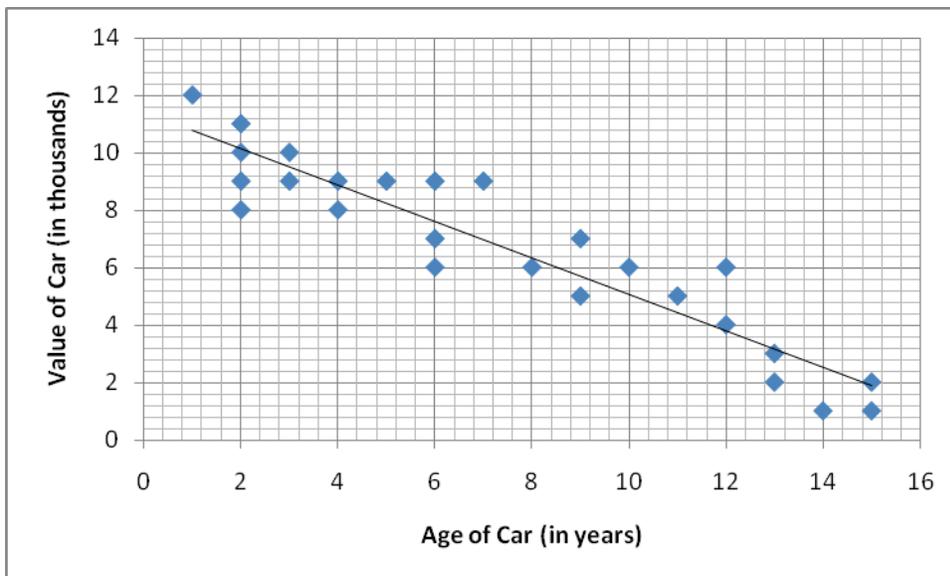
1. Best-fit line equation: $y = 0.61x + 57.4$
2. Draw a best-fit line on the graph below. How does it compare to the equation from #1. **Answers vary**
3. Based on this scatter plot, what can you say about study time and test scores?
The more you study, the better your grades (answers will vary)
4. Based on the best-fit line equation above, what would you predict would be the score for someone who studies for: **(based on rounding, answers could vary a little)**
 - a. 60 minutes? **94**
 - b. 45 minutes? **84.9**
 - c. 30 minutes? **75.7**
 - d. 67 minutes? **98.3**



B. Value of car vs. Age of car (X-axis = Age of car (years); Y-axis = Value of car in thousands)

x	1	2	2	2	2	3	3	4	4	5	6	6	6	7	8	9	9	10	11	12	12	13	13	14	15	15
y	12	8	9	10	11	9	10	8	9	9	6	7	9	9	6	5	7	6	5	4	6	2	3	1	1	2

- Best-fit line equation: $y = -0.63x + 11.4$
- Draw a best-fit line on the graph below. How does it compare to the equation from #1? **Answers vary.**
- Based on this scatter plot, what can you say about the relationship between the age of a car and its value? **The older a car gets, the more it loses value (answers will vary)**
- Based on the best-fit line equation above, what would you predict would be value of a car:
 - 6 years old? **\$7620 (based on rounding, answers could vary—also students should multiply by \$1000 to get correct answer)**
 - 11 years old? **\$4470**
 - 13 years old? **\$3210**
 - 17 years old? **\$690**



- What careers can you think of that could use best fit-lines in their line of work? (Name at least 3)
Answers will vary—use some of the ones students brainstormed at beginning of class)
 - _____
 - _____
 - _____
- How could these careers use the best-fit lines? (Be specific)
Answers will vary—any correlation that applies to the careers listed above should be accepted
 - _____
 - _____

c. _____

3. What have you learned about best-fit lines that you didn't know before this lesson?

Answers will vary
