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Project

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ssion Project

poster

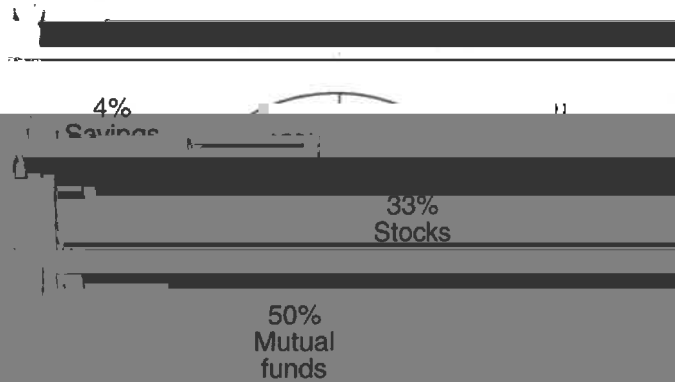
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**Probability & Statistics School Closing Packet**

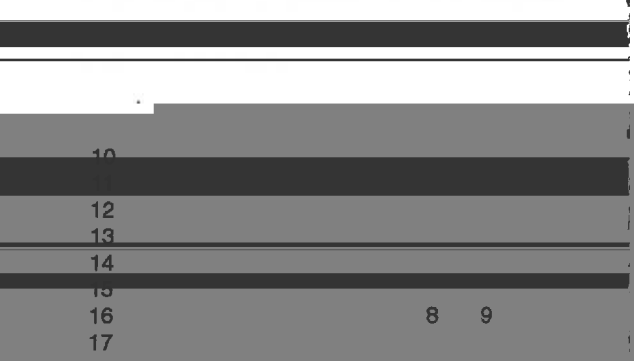
Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. The accompanying circle graph shows how Joan



3. Jorge made the accompanying stem-and-leaf plot of the weights in pounds of each member of



Key: 16 | 1 = 161

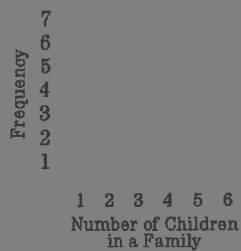
If she invested a total of \$12,000, how much money did she invest in CDs?

- A. 145    B. 150    C. 152    D. 168

- A. \$1,560                      B. \$9,230  
 C. \$15,600                      D. \$9,200

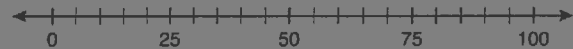
2. The accompanying histogram shows the distribution of the number of children in the families of the students in a ninth-grade class.

The mode of the set of data in the histogram is



- A. 5                      B. 2  
 C. 3                      D. 7

4. What is the range of the data represented in the box-and-whisker plot shown below?



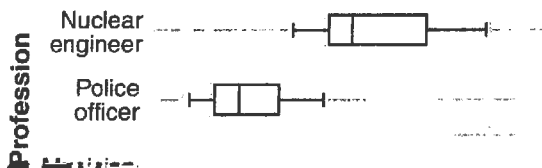
- A. 40                      B. 45                      C. 60                      D. 100



10. The box-and-whisker plot below represents a set of data. Pat's grades on Course I tests were 60, 75, 82, 87, 90, 95, 98, 100.



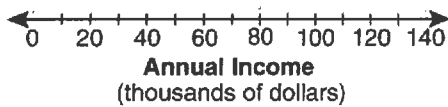
11. The accompanying box-and-whisker plots can be used to compare the annual incomes of three professions.



13. In Syracuse, high temperatures for six days were recorded at  $90^{\circ}$ ,  $84^{\circ}$ ,  $84^{\circ}$ ,  $78^{\circ}$ ,  $73^{\circ}$ , and  $71^{\circ}$ . What is the median temperature for these days?

- A.  $84^{\circ}$     B.  $81^{\circ}$     C.  $80^{\circ}$     D.  $78^{\circ}$

14. The set of scores on a mathematics test is 72, 80, 80, 82, 87, 88, 90, 91, 92, 95, 98, 100.



- A. 84    B. 83    C. 82    D. 80

- A. 90    B. 91    C. 88    D. 92

16. Which statement is true about the data set 3, 4, 5, 6, 7, 7, 10?

- A. mean = mode      B. mean > mode  
 C. mean = median    D. mean < median

19. Based on the data in the table, which interval contains the median?

- A. 0–5  
 B. 6–10  
 C. 11–15  
 D. 16–20

Interval	Frequency
0–5	1
6–10	2
11–15	2
16–20	4

18. Given the following table, which score is the mode?

Score	Frequency
98	2
95	3
92	2
87	1
84	2

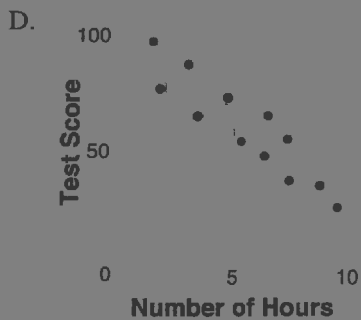
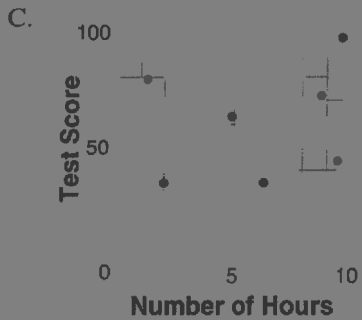
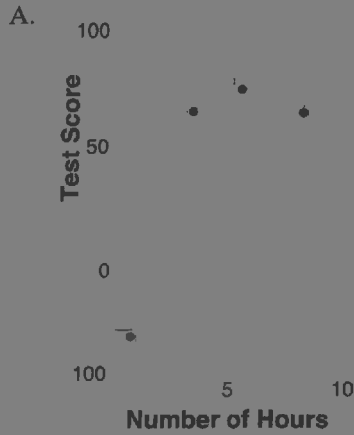
20. What is the mean of the data shown in the table?

Measure ( $x_i$ )	Frequency ( $f_i$ )
8	5
16	1
20	2

- A. 5.5    B. 8    C. 12    D. 13.3

21. There is a negative correlation between the number of hours a student watches television and his or her social studies test score. Which scatter plot below displays this correlation?

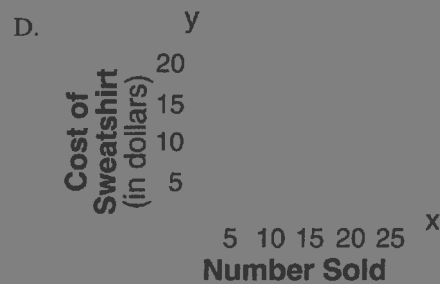
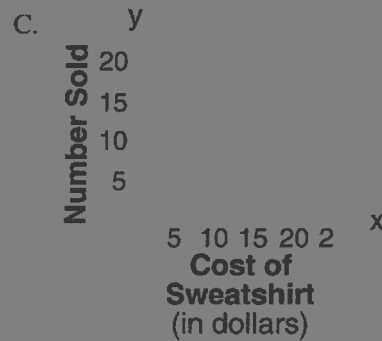
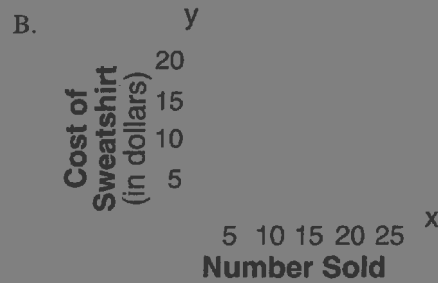
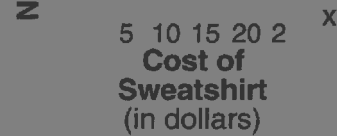
22. The school store did a study comparing the cost of a sweatshirt with the number of sweatshirts sold. The price was changed several times and the numbers of sweatshirts sold were recorded. The data are shown in the table below.



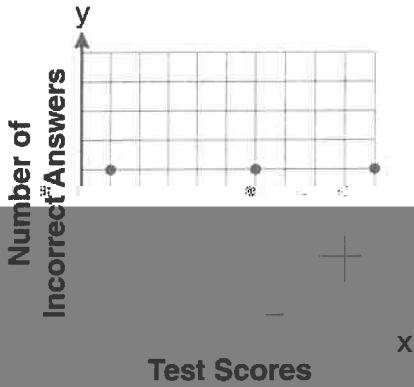
A.

Cost of Sweatshirt	Number Sold
\$10	9
\$25	6
\$15	15
\$20	11
\$5	14

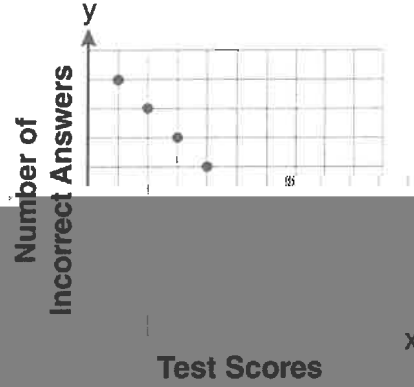
Which scatter plot best represents the data?



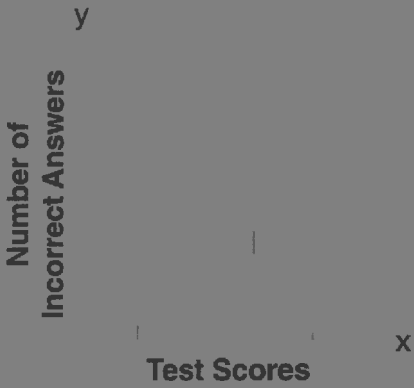
A.



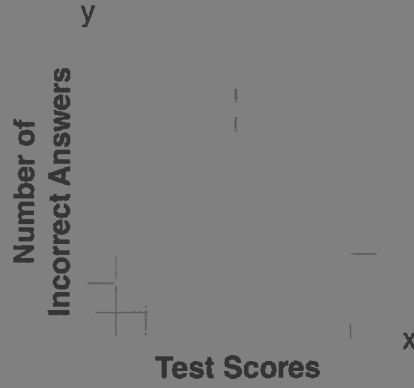
B.



C.

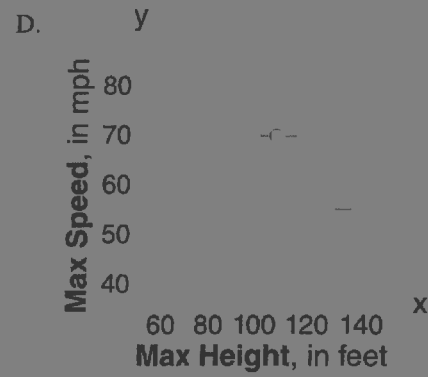
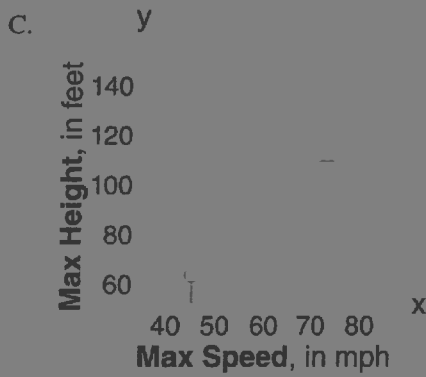
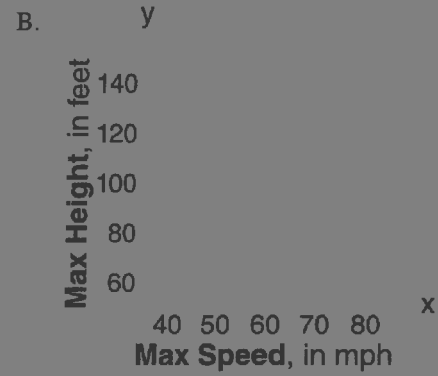
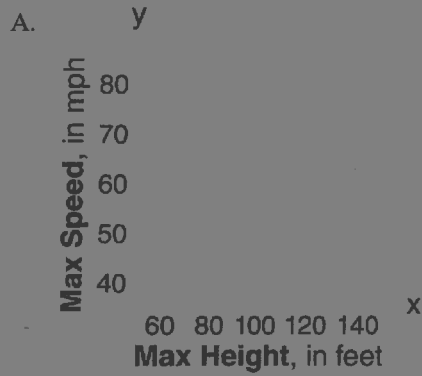


D.

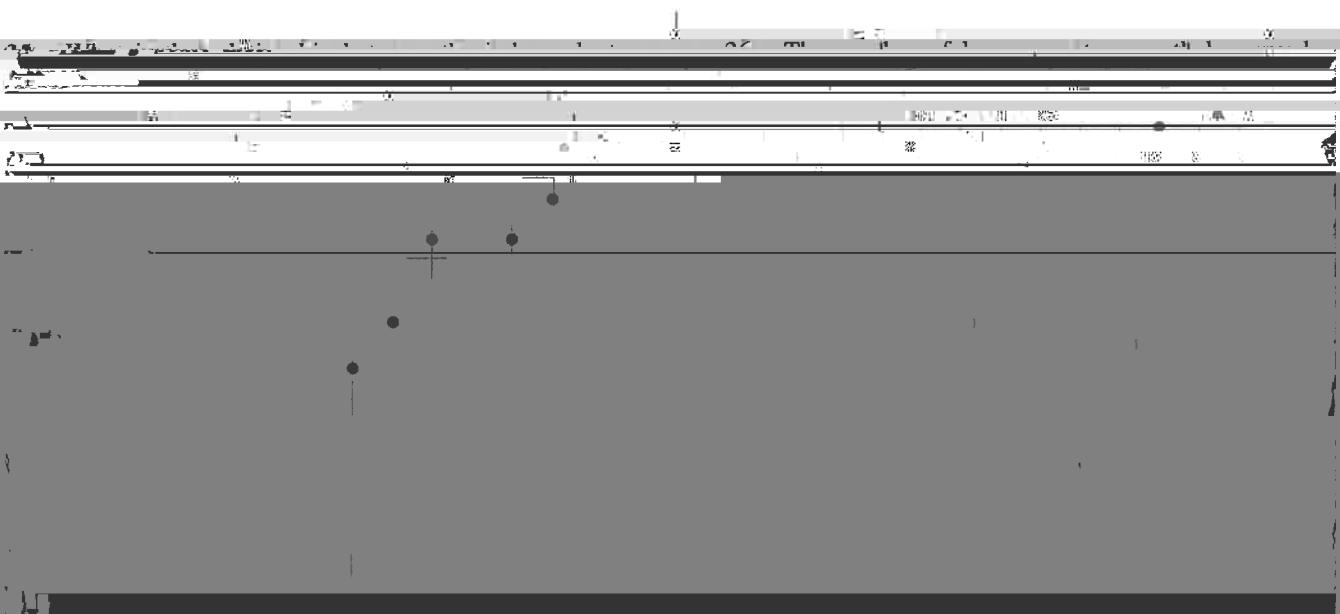


24. The maximum height and speed of various roller coasters in North America are shown in the table below.

Roller Coaster	Max Height (feet)	Max Speed (mph)
Kingda Ka	456	128
Top Thrill Dragster	420	120
Steel Dawn	205	70
Twister	160	60
Phantom Blaster	140	55
Dragonair	120	50
Millennium Force	316	110
Intimidator 305	301	105
Drop Tower	276	100
King of the Hill	246	95
Twisted Timbers	228	90
Phantom Blaster	140	55
Dragonair	120	50
Millennium Force	316	110
Intimidator 305	301	105
Drop Tower	276	100
King of the Hill	246	95
Twisted Timbers	228	90



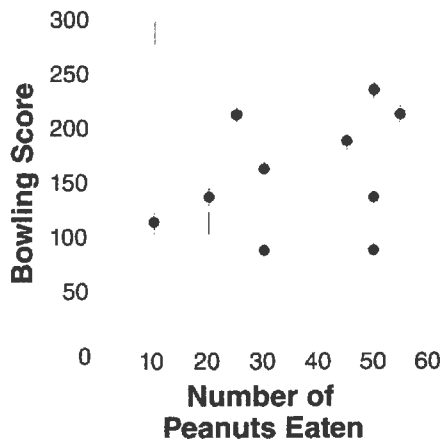




- A. undefined correlation
- B. negative correlation
- C. positive correlation
- D. no correlation



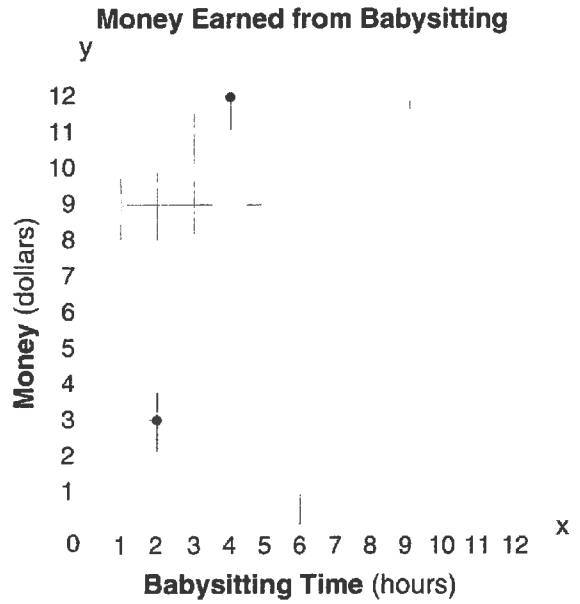
29. The scatter plot below represents the relationship between the number of peanuts a student eats and the student's bowling score.



Which conclusion about the scatter plot is valid?

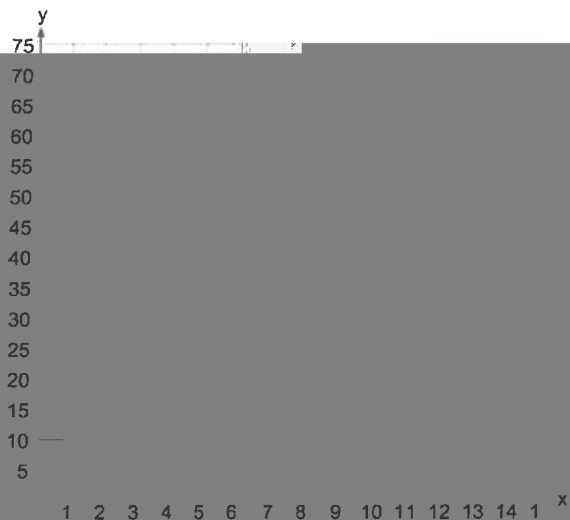
- A. There is almost no relationship between eating peanuts and bowling score.
- B. Students who eat more peanuts have higher

30. Which equation most closely represents the line of best fit for the scatter plot below?

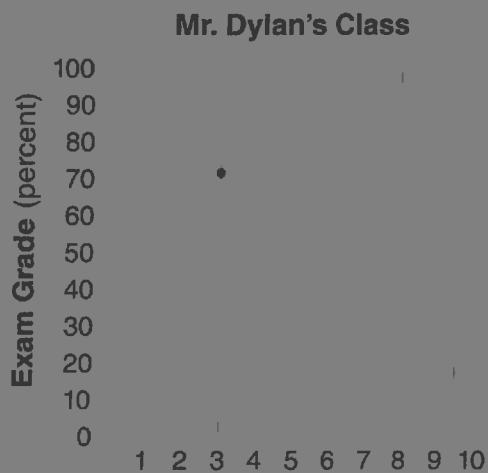


- A.  $y = x$
- B.  $y = \frac{2}{3}x + 1$

31. A scatter plot was constructed on the graph below and a line of best fit was drawn.

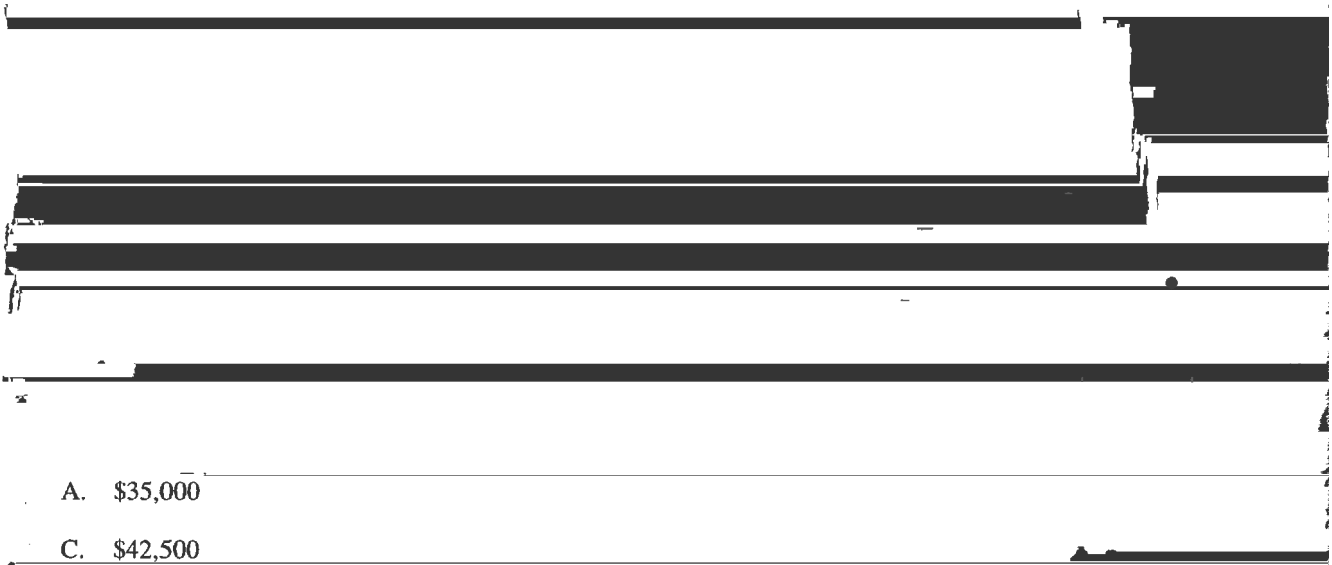


32. The number of hours spent on math homework each week and the final exam grades for twelve students in Mr. Dylan's algebra class are plotted below.



32. The scatter plot below shows the profit by month

25. The graph below illustrates the number of cases

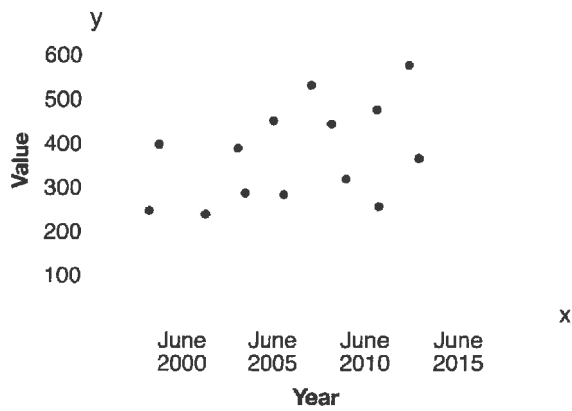


A. \$35,000

C. \$42,500

A. 0      B. 200      C. 300      D. 400

34. Based on the line of best fit drawn below, which value could be expected for the data in June 2015?



A. 230      B. 310      C. 480      D. 540

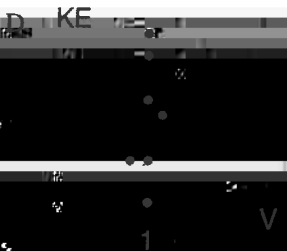
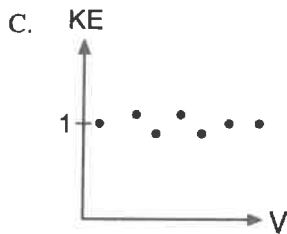
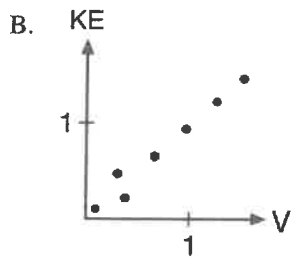
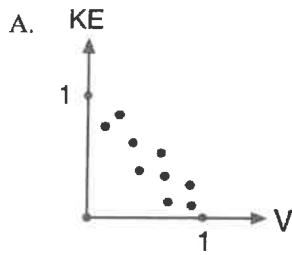
80 55 50 45 40 35 30 25 20 15 10 5 0

1

A.  $y$

$y = \frac{1}{2}$

38. In the physics lab, Thelma determined the kinetic energy,  $KE$ , of an object at various velocities,  $V$ , and found the linear correlation coefficient between  $KE$  and  $V$  to be  $+0.8$ . Which graph shows this relationship?



39. The relationship between  $t$ , a student's test scores, and  $d$ , the student's success in college, is modeled by the equation  $d = 0.48t + 75.2$ . Based on this linear regression model, the correlation coefficient could be

- A. between  $-1$  and  $0$     B. between  $0$  and  $1$   
 C. equal to  $-1$     D. equal to  $0$

40. Which value of  $r$  represents data with a strong positive linear correlation between two variables?

- A.  $0.89$     B.  $0.34$     C.  $1.04$     D.  $0.01$

Without using your book, match each term with a description and one or more underlined parts of the examples below. Examples can be used for more than one term.

<i>Term</i>	<i>Description</i>	<i>Example</i>	<i>Term</i>	<i>Description</i>	<i>Example</i>
<b>Context</b>			<b>Sample</b>		
<b>Data</b>			<b>Variable</b>		
<b>Data table</b>			<b>Unit</b>		
<b>Case</b>			<b>Categorical</b>		
<b>Population</b>			<b>Quantitative</b>		

### Descriptions

1. information organized into rows and column
2. quantity using a standardized measurement
3. holds information about the same characteristic for all persons or things studied
4. types of values that are measurements
5. who, what, where, when, and how
6. information
7. the group of all the persons or things we wish we knew about
8. types of values that classify persons or things into separate groups

9. one person or thing for which we have information
10. the group of persons or things from which we can actually obtain information

### Examples

- The Federal Aviation Administration (FAA) monitors safety and customer service. A For each flight (B), the carrier must report the type of aircraft (C), number of passengers (D), whether or not the flights departed and arrived on schedule and any mechanical problems.
- A study was conducted to compare the abilities of men and women (E) to perform the strenuous tasks required of a shipboard firefighters (Human Factors 24 [1982]). The study reports the pulling force (F) that a group of firefighters (G) were able to exert in



Roll the die and be the person closest

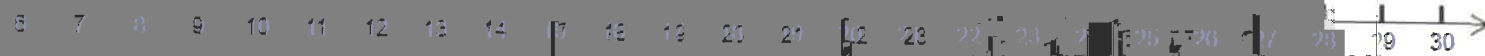
Their rolls and final sum are shown

P  
6  
6  
1  
4  
3  
1  
2  
3

	inner
6= 24	Player 2
= 19	Player 3
1 = 17	Player 2
=22	Player 2
, 4, 2=20	Player 3
4=19	Player 1
, 1 = 21	Player 3
, 6, 3=20	Player 3
1, 3,4 =21	All 3 win
, 2, 3 = 22	Player 1
, 2, 3, 1, 2	Player 2
7	Player 1
on?	

you reach it to ensure you don't go

take?



**7. Describe the Shape, Center and Spread of the losing scores.**

**8. Are there any outliers? If there are, correct your box and whisker plot.**

**9. Based on this information, what would you describe as a typical losing score for this game?**

## Probability & Statistics

### Linear Regression

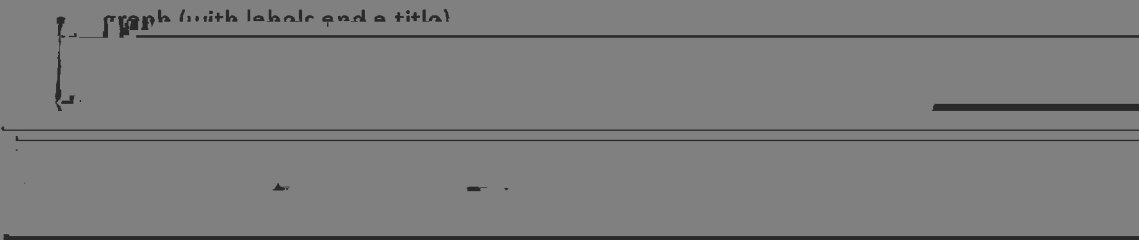
The following table shows the life expectancy of females and the gross nation product for countries in North and South America. For example, the average woman in Argentina lives to the age of 72.7 years

the value of following countries in Argentina is \$2,370,000,000,000

Country	Life Expectancy (years)	Gross National Product (billions of dollars)
Argentina	72.7	2370
Bolivia	55.4	630
Brazil	67.6	2680
Chile	75.1	1940
Columbia	69.2	1260
Ecuador	67.6	980
Paraguay	66.1	330
Venezuela	68.5	1110
Paraguay	66.5	1160
Peru	74.9	2560
Uruguay	72.8	2560
Venezuela	66.0	2490
Mexico	79.8	20470
Canada	78.3	21790

Create a poster to show the relationship between the two variables.

Your final result must include:



- residual plot (with labels and title)
- regression equation
- correlation coefficient
- explanation of the strength and directions of the correlation