

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

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

1. A teacher is interested in finding the relationship between grades in Mathematics and grades in English. She records the final grades in percentage for both courses.

Mathematics	English
69	71
71	73
90	86
100	96
75	91

She then plots the scatter plot of the data using Mathematics as the independent variable.

Use your calculator to determine the equation of the linear regression line for the data.

- A.  $y = 0.65x + 30.67$     B.  $y = 0.45x + 14.32$   
 C.  $y = 0.53x + 17.53$     D.  $y = 0.45x + 15.12$

2. The following table shows SAT scores for the past 5 years since a new experimental math program was introduced.

Year	1	2	3	4	5
Average SAT score	440	432	410	415	405

If a linear regression line is used, then what is the predicted SAT score 3 years from now (to the nearest whole number)?

- A. 377    B. 392    C. 385    D. 361

3. In a study to determine the relationship between a person's weekly income and the amount a person spends per week for recreation the following data was obtained.

Income	Amount
700	230
1500	150
1100	250
1400	120
1500	240

A scatter plot is drawn using Income as the independent variable.

Use your calculator to determine the equation of the linear regression line for the data.

- A.  $y = -0.08x + 299.41$   
 B.  $y = -2.78x + 1790.63$   
 C.  $y = -0.12x + 1694.18$   
 D.  $y = -1.34x + 8017.78$

4. The following table shows SAT scores for the past 5 years since a new experimental science program was introduced.

Year	1	2	3	4	5
Average SAT score	420	428	430	435	440

If a linear regression line is used, then what is the predicted SAT score 3 years from now (to the nearest whole number)?

- A. 454    B. 431    C. 413    D. 448

5. The table gives a person's number of years in school and their annual salary.

Use your calculator to determine the equation of the linear regression line for the data.

$x$ : Years of School	$y$ : Annual Salary
12	30,000
13	42,000
14	46,000
16	78,000
17	116,000

- A.  $y = 16,116x - 169,674$   
 B.  $y = 40,101x + 169,416$   
 C.  $y = 40,208x - 117,751$   
 D.  $y = 12,278x + 180,176$

6. A teacher wants to know if the number of absences a student has affects the test score. In the data, the independent variable is Number of Absences.

Use your calculator to determine the equation of the linear regression line for the data.

Number of Absences	Test Score
7	55
8	68
9	70
12	78
14	84

- A.  $y = 3.56x + 35.41$     B.  $y = 2.78x + 79.06$   
 C.  $y = 0.25x - 7.75$     D.  $y = 8.34x + 80.17$

7. A sporting goods store is interested in finding the linear relation between the number of golf clubs purchased at one time and the cost per golf club. The following data was obtained:

Number of golf clubs purchased $x$	Cost per golf club in dollars $y$
1	55
3	52
6	46
10	32
15	25

What is the equation of the linear regression line for the data?

- A.  $y = -2.2857x - 58$     B.  $y = -4.3308x - 54$   
 C.  $y = -1.7585x - 35$     D.  $y = -3.5685x - 75$

8. Consider the following table showing the amount of money, in thousands of dollars, spent on advertising and the associated annual profit also in thousands of dollars of a particular company.

Annual Advertising	18	16	23	27	35
Annual Profit	62	60	130	116	148

If 50 thousand dollars are spent on advertising then, approximately, how many thousands of dollars of profit can be expected if the linear regression equation is used?

- A. 272    B. 228    C. 282    D. 250