

CHECKING YOUR PROGRESS: A SELF-TEST

1. Match the following:

- | | |
|----------------------------|--|
| _____ positive correlation | a. a straight line describes the relationship between two variables |
| _____ negative correlation | b. coefficient of determination |
| _____ zero correlation | c. Y intercept of the regression line |
| _____ ρ | d. no relationship between the variables |
| _____ scatterplot | e. direct relationship between the variables |
| _____ linear correlation | f. inverse relationship between the variables |
| _____ regression equation | g. population correlation coefficient |
| _____ r^2 | h. used for prediction |
| _____ b | i. graph used to show the relationship between two variables |
| _____ a | j. slope of the regression line |

2. The ACT math and science scores for eight students are shown here. Compute r , and test it for significance.

| <u>Student</u> | <u>Math ACT</u> | <u>Science ACT</u> |
|----------------|-----------------|--------------------|
| A | 26 | 24 |
| B | 22 | 24 |
| C | 13 | 10 |
| D | 30 | 31 |
| E | 12 | 17 |
| F | 15 | 15 |
| G | 19 | 21 |
| H | 20 | 16 |

3. Use the data from Problem 2 to compute a regression equation, and use the equation to predict a science ACT score for a student scoring 33 on the math ACT.

4. Without knowing who is married to whom, an observer has rated the attractiveness of 10 couples on a 10-point scale. Compute the appropriate correlation coefficient, and test it for significance. Assume that the ratings are ordinal scale measurement at best.

| <u>Couple</u> | <u>Wife's Rating</u> | <u>Husband's Rating</u> |
|---------------|----------------------|-------------------------|
| A | 7 | 6 |
| B | 6 | 8 |
| C | 5 | 4 |
| D | 8 | 9 |
| E | 3 | 5 |
| F | 1 | 2 |
| G | 5 | 2 |
| H | 9 | 9 |
| I | 10 | 7 |
| J | 7 | 5 |