

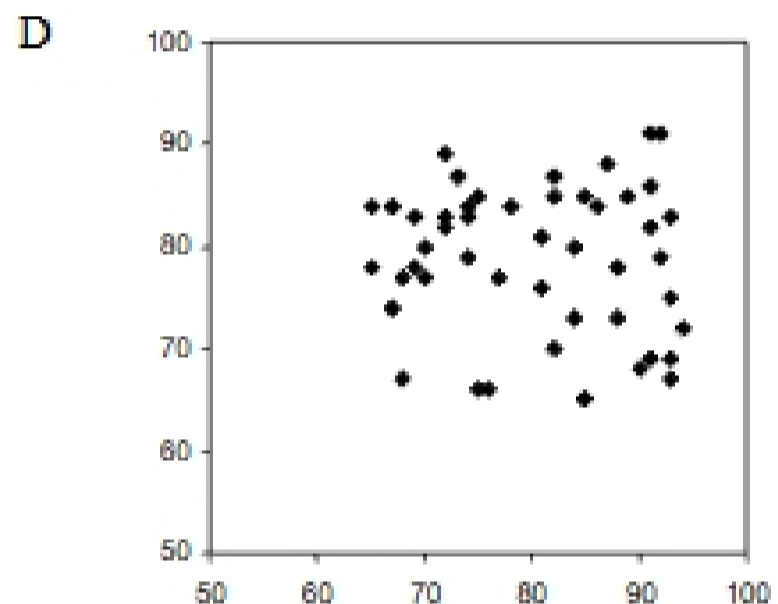
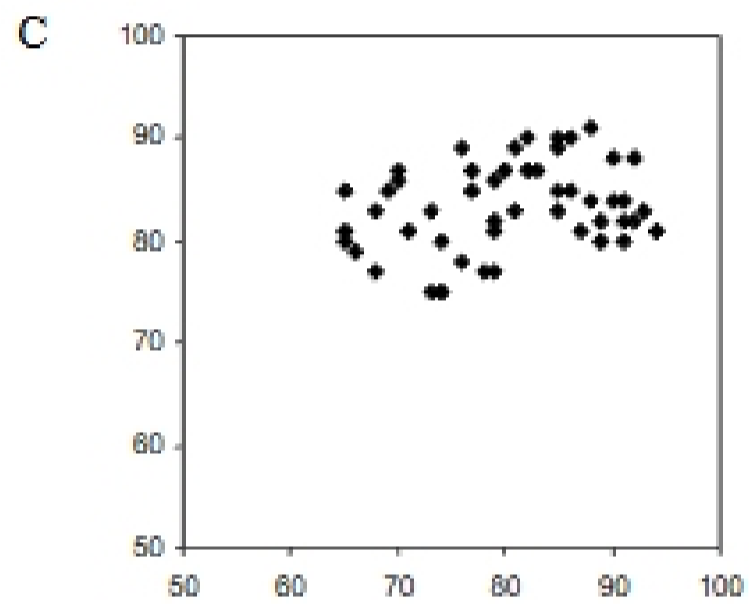
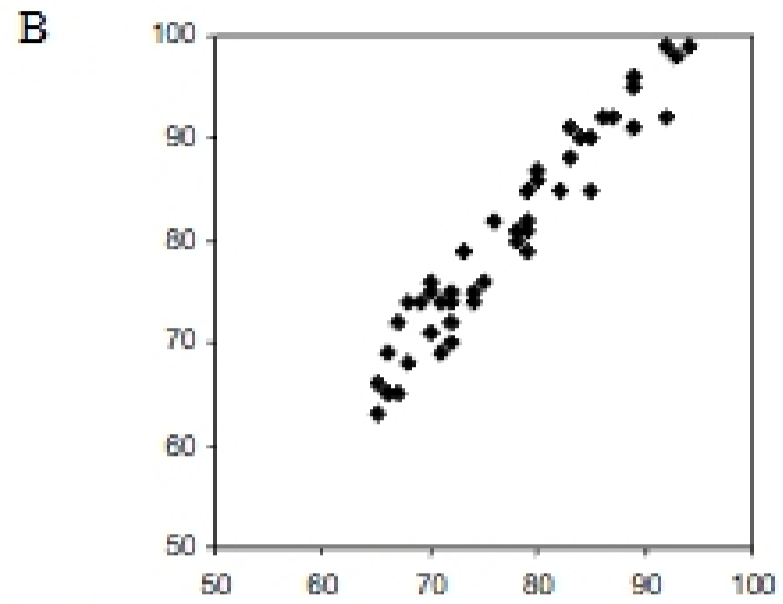
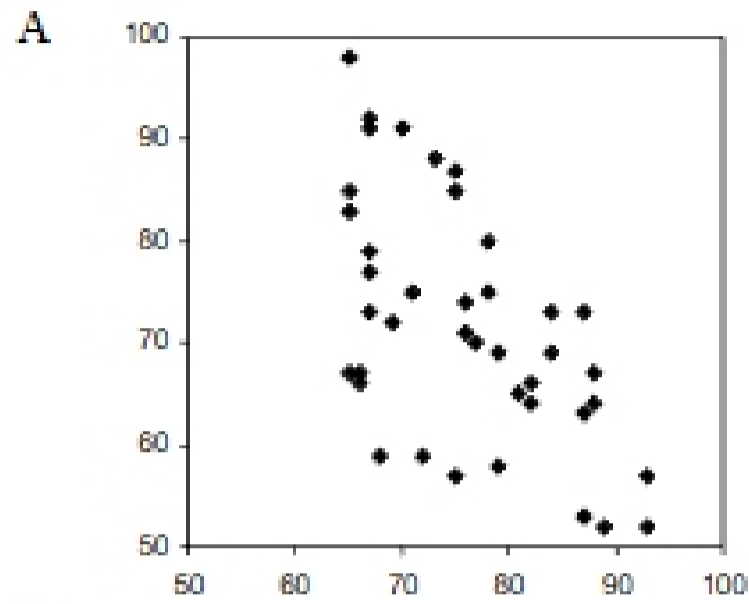
Name: \_\_\_\_\_

## *PSY 216: Elementary Statistics*

### *Exam 2*

This exam consists of 25 multiple-choice questions and 5 essay / problem questions. For each multiple-choice question, circle the one letter that corresponds to the correct answer. Each multiple-choice question is worth 2 points. If you do not show your work in the essay / problem questions, you cannot receive partial credit. Each of the essay / problem questions is worth 10 points. You have until 10:50 AM to finish the exam. Budget your time wisely.

1. If two variables are correlated then
  - A.  $r > 1.0$
  - B.  $|r| > 1.0$
  - C. knowing the value of one of the variables allows you to predict the value of the other variable.
  - D. All of the above.
  
2. What is the Pearson's product moment correlation coefficient for the following two variables? Number of correct answers on exam 2 and the number of incorrect answers on exam 2.
  - A. +1.0
  - B. -1.0
  - C. 0
  - D. You cannot determine the correlation coefficient from the information given.
  
3. If as the number of older brothers and sisters that a person has increases, the level of extraversion also increases, then these two variables have
  - A. a positive correlation.
  - B. a negative correlation.
  - C. a zero correlation.
  - D. either a positive or negative correlation depending on how strongly they are related to each other.
  
4. Which of the following correlation coefficients show the strongest relation?
  - A.  $r = -0.74$
  - B.  $r = -0.12$
  - C.  $r = 0.63$
  - D.  $r = 2.97$



5. Which of the scatter plots shown above has the  $r$  with the greatest magnitude?

- A. A
- B. B
- C. C
- D. D

6. Which of the scatter plots shown above has the  $r$  with the smallest magnitude?

- A. A
- B. B
- C. C
- D. D

7. Which of the scatter plots shown above has the  $r$  that is negative?

- A. A
- B. B
- C. C
- D. D

8. You took a standardized personality test. You received a score of 18 on the extraversion scale and a score of 15 on the conscientiousness scale. The mean of both scales is 10. The standard deviation of the extraversion scale is 2 and the standard deviation of the conscientiousness scale is 1. Which of the following statements is correct?
- You are more extraverted than conscientious (because  $18 > 15$ ).
  - You are more extraverted than conscientious (because the z score for extraversion is larger than the z score for conscientiousness).
  - You are more conscientious than extraverted (because the z score for conscientiousness is larger than the z score for extraversion.)
  - You are as conscientious as you are extraverted (because the z score for conscientiousness is equal to the z score for extraversion).
9. Which of the following sets of properties of z scores is true?
- $\bar{z} = 1, s_z = 0, \sum z^2 = N$
  - $\bar{z} = N, s_z = 0, \sum z^2 = 1$
  - $\bar{z} = 0, s_z = 1, \sum z^2 = N$
  - $\bar{z} = N, s_z = 1, \sum z^2 = 0$
10. The coefficient of determination
- is a measure of how accurate our predictions will be.
  - is the proportion of variation in one variable that is explainable by variation in the other variable.
  - plus the coefficient of non-determination must equal 1.
  - All of the above.
11. A researcher sent a questionnaire to a random sample of senior citizens. The results indicated that the more grandchildren that the senior citizens had, the greater their satisfaction with life. We can conclude that
- having grandchildren causes senior citizens to be satisfied with life.
  - being satisfied with life causes senior citizens to have grandchildren.
  - having a lot of money causes senior citizens to be satisfied with life and allows them to have more children, which in turn allows them to have more grandchildren.
  - having grandchildren is related to satisfaction with life, but may not cause it.
12. Which of the following statements about level of measurement and Pearson's product moment correlation coefficient is correct?
- Pearson's r can safely be used with any of the levels of measurement.
  - Pearson's r can safely be used only with nominally scaled variables.
  - Pearson's r can safely be used only when at least one, but not necessarily both, of the variables are nominally scaled.
  - Pearson's r can safely be used only when both variables have at least an interval level of measurement.