Wilf Csaplar Jr.   Economics 222   Homework #7
The homework is due Monday 4/13 because there are no classes on 4/6.
Place your name on the back of this sheet of paper and nowhere else. Staple your answers face
up on the front of this sheet of paper. Failure to follow these directions will cost you 1 point.
Your assignment will be typed, except graphs can be drawn by hand and mathematical equations
can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing
or print on the back of scrap paper, I will give you one additional point.

1) (15 points) Pearson's Correlation Coefficient, r, assumes a linear relationship between the
variables. Draw a non-linear relationship and use that to explain how you could get different rs
for the same relationship depending on where you start.

2) (10 points) Why does the confidence interval around Ŷ look like what the book describes as a
"bow tie"?

3) (10 points) Suppose we thought that missing classes caused lower grades. We have data on
the number of classes missed and the grade. Would you use the Pearson's Correlation
Coefficient to determine if that is true? Explain your logic. Would you run a regression with
"grade" as the independent variable and "missed classes" as the dependent variable? Explain
your logic.

4) (15 points) Draw two relationships which individually have a correlation coefficient of 0.
However, if you combine the two data sets you get a negative correlation coefficient. Explain
how your graph fits all three of the requirements I told you. What is the name of this type of
problem?