Name: **Statistics**

Date: **Practice Quiz 8-A**

1. Estimate the correlation coefficient between countries' distance from the equator and the following variables.

a) average daily temperature

r ≈ _____, because warmer countries tend to be closer to the equator.

b) wealth per capita

r ≈ _____, because wealthier countries tend to be farther from the equator.

2. What does it mean that there is a negative correlation between emotional stability and junk food consumption?

The more emotionally stable someone is, the _____.

3. Seven juniors give their fall semester grade in Spanish and in English.

a) Calculate *r* for the sample below by filling in the table.

$\bar{x} = 82$ $\bar{y} = 80$ $s_x = 12.14$ $s_y =$ _____

Spanish Grade (x)	English Grade (y)	$(x - \bar{x})$	$(y - \bar{y})$	$(x - \bar{x})(y - \bar{y})$
64	70	-18	-10	180
70	53	-12	-27	_____
79	84	_____	_____	_____
85	85	_____	_____	_____
85	89	_____	_____	_____
92	90	_____	_____	_____
99	89	_____	_____	_____
			$\sum$ _____	= 787

s_{xy} = _____ ÷ (___ − 1) = 131.2 r = _____ ÷ (_____ × _____) = 0.79

b) Calculate r and p on the calculator for a two-tailed test, and state the conclusion, followed by r and p rounded to four decimal places.

The higher someone's Spanish grade is, the _____ their English grade is expected to be, r = _____, p = _____.

c) Identify a possible mediating variable, and explain how it could make for a causal relationship between the two variables.

Learning Spanish can _____,

which may help with English skills.

d) Identify a possible confounding variable, and explain how it could make for a noncausal relationship between the two variables.

In general, _____

tends to increase Spanish scores and English scores, making them correlated even though neither necessarily affects the other.

e) Write the equation of the line of best fit.

y = _____ x + 7.00

f) Use the line of best fit equation to predict the English grade of a junior with a grade of 80 in Spanish.

y(80) = _____ (_____) + _____ = 78.2

g) Use specific numbers to explain why calculating (f) is interpolation. Do not use the word *it*.

80 is between the _____, which is 64, and

the _____, which is _____.