Quiz 10
Week of April 5, 1999

1) In fitting a regression line to a scatter plot using OLS, estimates a and b of the line's y-intercept and slope are chosen to (choose one of the 4 possibilities)

- ☐ *i)* minimize the largest prediction error,
- ☐ *ii)* minimize the square of the largest prediction error,
- ☐ *iii)* minimize the sum of prediction errors, or
- ☐ *iv)* minimize the sum of squared prediction errors.

2) When the OLS estimate of the slope, b, is zero, the OLS estimate of the intercept, a, is (choose one of the 4 possibilities)

- ☐ *i)* the mean of the predictor variable,
- ☐ *ii)* the median of the predictor variable,
- ☐ *iii)* the mean of the response variable,
- ☐ *iv)* the median of the response variable,
- ☐ *v)* another complex function of the data, or
- ☐ *vi)* inestimable.

3) Answer true or false to each of the following questions.

a) The OLS regression line must pass through the point $(\bar{X}, \bar{Y})$.

☐ *True* ☐ *False*

b) In an observational study, the slope b measures the change in Y caused by a unit change in X.

☐ *True* ☐ *False*

c) Weighted least squares (WLS) can be used to give less reliable data (outliers, for example) less weight when estimating the regression line.

☐ *True* ☐ *False*