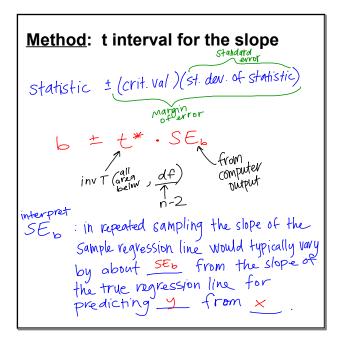
12.1b Confidence Intervals for the slope of a LSRL a estimates & Sestimates of st.dev. of residuals of residuals (how far from the LSRL will the LSRL will the LSRL will the points pur points



example: flowers

Step 1

B is the slope of the true regression line for predicting hours of freshness (y) from amount of sugar (x). C-level: 99% Step 2) Use a t interval for the slope

conditions:

Linear - the scatterplot shows a linear pattern and the residual plot shows no pattern

Independent - Knowing the freshness of one flower doesn't tell me info on the freshness of another

Normal — The histogram of the residuals is not strongly skewed and there are no outliers:

Equal Variance—there is no obvious increase or decrease in variance on the residual plot

Random — 12 carnations randomly selected and treatments were vandomly assigned.

Step 3] $b \pm t \times SE_{b} \qquad df = 12-2=10$ $15.2 \pm (3.169)(1.943)$ (9.042, 21.36)

Step 4) We are 99% confident that the interval (9.04, 21.35) captures the true slope of the regression line relating the amount of sugar to hours of freeshness of the flowers.