Shepherd
UNIVERSITY

1. For the following data, (a) write down the equation for the SD line, (c) sketch the SD line and (c) use the SD line to predict the y value if $x = 130$.

$$x: \quad \text{average} \approx 100, \quad SD \approx 15$$
$$y: \quad \text{average} \approx 110, \quad SD \approx 30, \quad r \approx 0.8$$

2. For the following data, (a) write down the equation for the SD line, (c) sketch the SD line and (c) use the SD line to predict the y value if $x = 8$.

$$x: \quad \text{average} \approx 10, \quad SD \approx 2$$
$$y: \quad \text{average} \approx 12, \quad SD \approx 6, \quad r \approx -0.2$$

3. Suppose sons were always 3" taller than their fathers. What would the correlation coefficient be? Sketch the graph of fathers' and sons' heights.

4. Suppose sons were always 3" shorter than their fathers. What would the correlation coefficient be? Sketch the graph of fathers' and sons' heights.

5. Suppose your Internet bill is always 30% of your phone bill. What would the correlation coefficient be? Sketch the graph of phone bill and Internet bill.