***Statistics Linear Regression Worksheet Name:***

1. A study measured the heights of husbands and wives to see if there was any relationship. The mean of the wives’ heights was 64.5 inches with a standard deviation of 2.5 inches. The mean of the husbands’ heights was 68.5 inches with a standard deviation of 2.7 inches. The resulting correlation was 0.5.
2. Find the equation of the LSRL to predict the husband’s height.
3. What would you predict for the height of a husband given a wife’s height of 66 inches?
4. A copy machine dealer has data on the number x of copy machines at each of 89 customer locations and the number y of service calls in a month at each location. Summary calculations give  = 8.4, sx = 2.1,  = 14.2, sy = 3.8, and r = 0.86.
5. What is the equation of the least squares regression line?
6. What would you predict for the number of service calls for a location with 12 copiers?
7. One measure of the success of knee surgery is post-surgical range of motion for the knee joint following a knee dislocation.

Age 45 40 31 28 26 16 14 20 21

Range of Motion 205 137 133 122 135 135 108 120 127

1. Find the LSRL
2. If John was 25 when he was injured and his range of motion was measured as 120, what was the residual for him
3. What % of the variation in range of motion is accounted for by the linear model relating to age?