

S:25 HW Supplement 3B (print 2 pages) Name _____ Sec _____
Chapters 8/9/10/12 – Correlation and Regression

Directions: For each problem show all necessary work in the space provided. Indicate clearly your answer.

Refer to the following information to answer questions (1) through (6).

A large group of women participated in a study of height. For each of these women, height (in inches) was recorded at age 10 and again at adulthood. The summary statistics are as follows:

average height at age 10 = 56

SD of height at age 10 = 2.0

average adult height = 64

SD of adult height = 2.4

$r = .62$

Both height at age 10 and height at adulthood were found to be normally distributed.

1. Amy is 59 inches tall as a 10 year old. Using the information in the study, predict Amy's adult height.

2. Betty is 55 inches tall as a 10 year old. Using the information in the study, predict Betty's adult height.

3. Estimate the average adult height for the group of women in the study who were 55 inches tall as 10 year olds.

4. Find the **equation of the regression line** used to predict adult height from height at 10 years.

5. Carol is at the 75th percentile for height, as a 10 year old. Using the information in the study, predict the percentile for her adult height.

6. Donna is at the 10th percentile for height, as a 10 year old. Using the information in the study, predict the percentile for her adult height.