HOMEWORK FOR CHAPTER 5 IN OUR BOOK

(Chapter 3 in this book)

HW 1-10,11,13 ANSWERS

T3.1 E

T3.2 D

T3.3 E

T3.4 A

T3.5 C

T3.6 B

T3.7 E

T3.8 B

T3.9 E

T3.10 D

T3.11 (a) *make a scatterplot*

(b) (predicted height in cm) = 71.95 + 0.3833(age in months)

(c) Since $y = 71.95 + 0.3833(48) = 90.348 cm$, the residual for Sarah is

$y - y = 90 - 90.348 = -0.348 cm$. It means that Sarah is 0.348 cm below the height predicted by the regression line.

(d) No. The linear trend will definitely not continue until she is 40 years old. The data is only based on the first five years of life, and making predictions beyond 0-5 years would be an extrapolation.

T3.13 (a) Yes. There is no obvious pattern in the residual plot, a linear model is appropriate for describing the relationship between wildebeest abundance and percent of grass burned.

(b) (predicted percent of grass burned) = 92.29 - 0.05762(number of wildebeest in thousands)

(c) The slope is -0.05762. So the predicted percent of grassy area burned decreases by about 0.058% for each additional 1000 wildebeest. The y-intercept here of saying an average of 92.29% of the grass will be burned with 0 wildebeest really makes no sense.

(d) s = 15.988%. The percentage of burned area is typically about 15.988% away from the percent predicted by the line of regression. r^2 =64.6%, so about 64.6% of the variation in the percentage of burned area can be explained or accounted for by the line of regression.