SOC510 Homework #5 Due October 6 (Tue)

Chapter 5.

A. Answer 1–4, using the following data.

work satisfaction(x)	12	24	17	28	24	36	20
propensity to leave a job(y)	44	36	25	23	32	17	24

1. For a regression model, $y = b_0 + b_1 x + e$, find the intercept (b_0) and the slope (b_1).
2. Interpret the regression model, $y = b_0 + b_1 x + e$
3. Draw the line of best fit on the scatterplot
4. Calculate the proportion of variance of y explained away by x (i.e., r^2)

B. People not only live longer today but also live longer independently, The May/June 1989 issue of *Public Health Reports* published an article titled "A Multistate Analysis of Active Life Expectancy." Two of the variables studied were a person's current age and the expected number of years remaining.

Age(x)	65	67	69	71	73	75	77	79	81	83
Years Remaining (y)	16.5	15.1	13.7	12.4	11.2	10.1	9.0	8.4	7.1	6.4

1. Calculate the equation of the best fit.
2. Interpret the result
3. Draw the line of best fit on the scatterplot
4. What are the expected years remaining for a person who is 70 years old?
5. Calculate the proportion of variance of y explained away by x (i.e., r^2)

C. From the textbook,
5.23; 5.26; 5.40; 5.45 (show your work, not just an answer)