- 1st hour: KKMN Ch.6: #7
- 2nd hour: questions/comp.lab

KKMN Ch.6: #7 p.102:

Ch.5 #3 table gives:

- INC (X) $\rightarrow$ husband's annual income
- TIME (Y) $\rightarrow$ time (months) between marriage and birth of 1st child

a. Determine r and r^2 for the variable pair and interpret

See SAS output page 1.

$r \approx .43 \quad r^2 \approx .18$

b. Test H_0: $\rho = 0$ versus H_A: $\rho \neq 0$ and interpet.

From (6.7), p.96

$$T = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \approx \frac{.43\sqrt{18}}{\sqrt{1-.18}} \approx 2.015$$

with p-value $\approx .058$. Thus, we cannot reject H_0 at the $\alpha = .05$ level.

c. Find a 95% CI for ρ and interpret wrt test in (b)

From (6.10), p.98

$$\frac{1}{2}\ln\frac{1+r}{1-r} \pm \frac{z_{.975}}{\sqrt{n-3}} = .4599 \pm \frac{1.96}{\sqrt{17}} \approx (-.016, .935)$$

Since 0 is in this interval, we cannot reject H_0 at the $\alpha = .05$ level.