Repeating the analysis of bodyfat data discussed in class.

Lab 4 - ST 512

1. Generate the X'X matrix and its inverse as shown on p. 38 of the course notes packet.

2. Use the TEST statement to compare models 1 and 4 from p. 41 of course packet (see p. 43 for analysis).

3. Obtain Mallow's C_p for each subset model using the code below:

```
PROC REG;
   MODEL y=x1-x3/selection=cp;
RUN;
```

   Which models are preferred ($C_p \leq p + 1$)?

4. Consider estimating mean bodyfat for a population with $(x_1, x_2, x_3) = (25, 50, 29)$. Use 95% confidence intervals to estimate this mean under mean models 1,2,6 and 4. (Use the missing y trick along with the following code:)

```
PROC REG;
   MODEL y=x1/p clm; /*model 1*/
   MODEL y=x2/p clm; /*model 2*/
   MODEL y=x1 x2/p clm; /*model 2*/
   MODEL y=x1-x3/p clm; /*model 4*/
```

   Which interval is the most narrow?