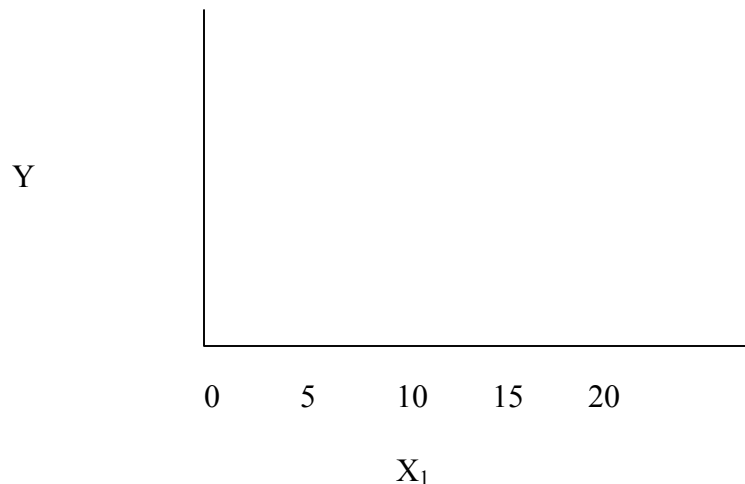
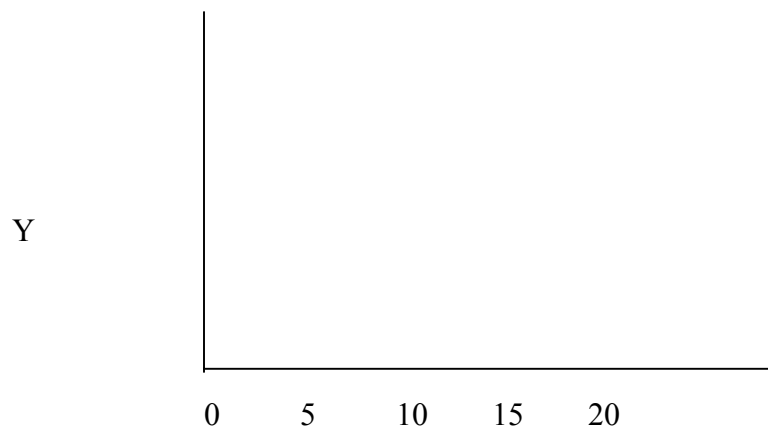


1. You are running a multiple regression analysis in SAS with independent variables  $x_1$ ,  $x_2$ , and  $x_1x_2$ , two independent variables and their interaction. Although  $y$  can take many possible values, the first independent variable can only take values from 0 to 20 and the second independent variable  $x_2$  can only take three values (1, 2, 3). Your model statement in SAS is: `model y = x1 x2 x1x2`. Use this information to answer the questions below.

- a. Draw the **three** regression lines on the  $y$ - $x_1$  plot below that represent the following interaction situation: you run SAS and find that the intercept is zero, but the other three regression weights are .5, 1.5, 1 (for  $x_1$ ,  $x_2$  and the interaction, respectively). Make sure to give the regression equation for each line (slope and intercept), and assign values to the  $y$ -axis.



- b. Draw three regression lines on the  $y$ - $x_1$  plot below that represent the following main-effect situation: You run SAS and find that the intercept and interaction are zero, but the regression weights corresponding to  $x_1$  and  $x_2$  are .5 and 1.5, respectively. Make sure to give the regression equation for each line, and assign values to the  $y$ -axis.



2. Using the dataset called Table91, reproduce the SAS printout on Page 424 for Exercise 5. (You can find a copy of this dataset on my web page.) After reproducing the printout, answer the questions in Exercise 5. Do not forget to indicate how you reproduced the printout.
3. Answer the questions to Exercise 3, Page 423.

These exercises are due on Tuesday, Feb 26.