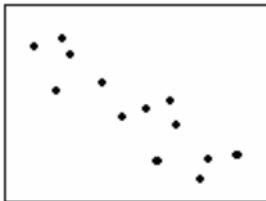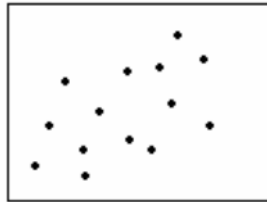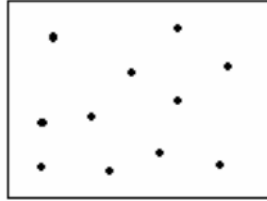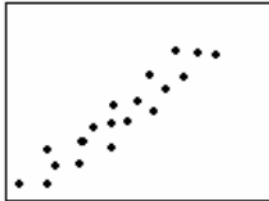# Unit 3 Scatter Plots and Correlations by Hand Notes

Look at the following scatter diagrams and state which of the following conditions you think is true for each diagram.

   a) High Linear Correlation

   b) Moderate Linear Correlation

   c) Weak Linear Correlation

   d) No Linear Correlation

   e) State if the correlation is positive or negative
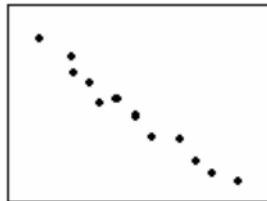
The number of workers on an assembly line varies due to the level of absenteeism on any given day. In a random sample of production output from several days of work, the following data were obtained, where x = the number of workers absent from the assembly line and y = the number of defects coming off the line.

x	3	5	0	2	1
y	16	20	9	12	10

a) Draw a scatter plot diagram for the given data.
b) Draw a straight line that you think best fits the data.
c) Would you say the correlation is low, moderate or high? Positive or negative?
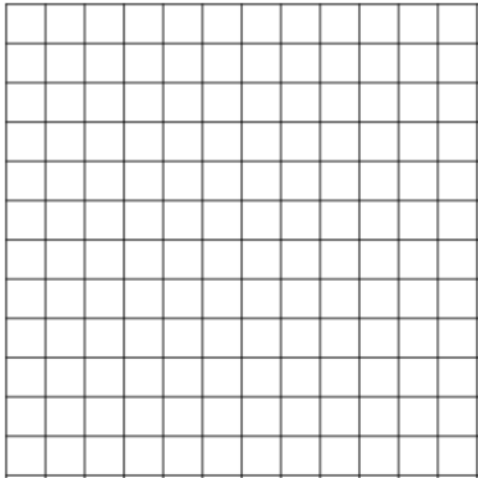
Do heavier cars really use more gasoline? Suppose that a car is chose at random. Let x be the weight of the car (in hundreds of pounds), and let y be the miles per gallon (mpg). The following information is based on data taken from *Consumer Reports* (vol. 62, no. 4)

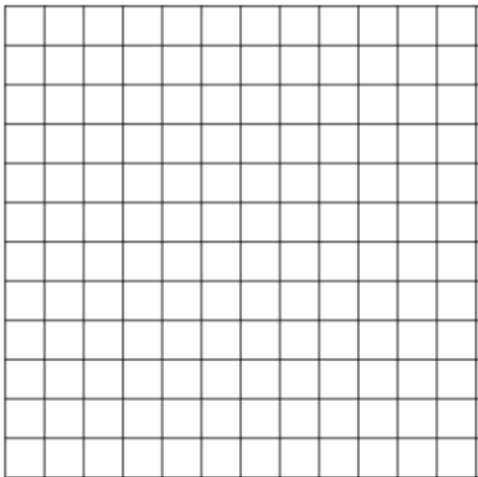| x	27	44	32	47	23	40	34	52
y	30	19	24	13	29	17	21	14

a) Draw a scatter plot diagram for the given data.
b) Draw a straight line that you think best fits the data.
c) Would you say the correlation is low, moderate or high? Positive or negative?

Unit 3 Scatter Plots and Correlations by Hand Homework

Suppose you are interested in buying a new Chevrolet Cavalier. You see the list price on several models with a variety of optional equipment. You wonder what the dealer invoice price is for each model. Let x be the list price (in thousands of dollars0 for a random selection of Chevrolet Cavalier vehicles of different models and options. Let y be the dealer invoice (in thousands of dollars) for the given vehicle.

x	10.9	11.2	12.3	13.4	17.9	14.5
y	9.5	10.5	10.9	12.4	15.9	12.2

a) Draw a scatter plot diagram for the given data.
b) Draw a straight line that you think best fits the data.
c) Would you say the correlation is low, moderate or high? Positive or negative?
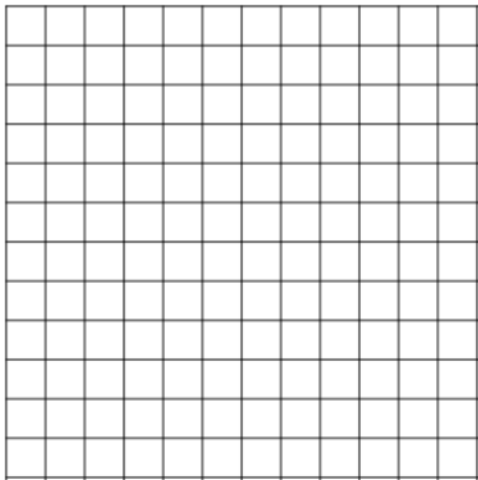
The following data are based on information from Domestic Affairs. Let x be the average number of employees in a group health insurance plan, and let y be the average administrative cost as a percentage of claims.

x	3	7	15	35	75
y	40	35	30	25	18

a) Draw a scatter plot diagram for the given data.
b) Draw a straight line that you think best fits the data.
c) Would you say the correlation is low, moderate or high? Positive or negative?