

## 2-5 Scatter Plots

### Day 1 - Drawing Scatter Plots

Algebra 2/Trig  
Mrs. Jensen

Example: All states and the District of Columbia have enacted laws setting 21 as the minimum drinking age. The table shows the estimated cumulative number of lives these laws have saved by reducing traffic fatalities.

YEAR	2000	2001	2002	2003	2004	2015
LIVES (1000s)	15.7	16.5	17.4	18.2	19.1	?

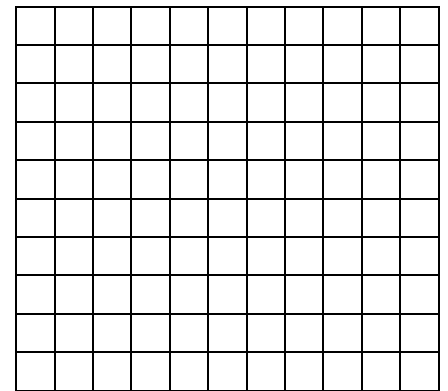
Steps:

1. Draw a scatter plot.
2. Use 2 ordered pairs to write a prediction equation.
3. Use the equation to make a prediction.

1. Draw a scatter plot by plotting the points from the table.

2. Write a prediction equation

- a. Find representative slope between 2 points on your graph.



- b. Use the slope to find the equation of the line  $y - y_1 = m(x - x_1)$

c. Final Equation:

$$y = \underline{\hspace{2cm}}x \pm \underline{\hspace{2cm}}$$

3. Use the equation to make a prediction for the year 2010.  
Plug  $x = 2015$

Scatter Plots  
Day 2 - Drawing Scatter Plots on TI84

Algebra 2/Trig  
Mrs. Jensen

The table below shows the approximate weight in tons and estimates for overall fuel economy in miles per gallon for several cars.

Fuel Usage

WEIGHT (tons)	MILES per GALLON
1.3	29
1.4	24
1.5	23
1.8	21
2.1	17
2.4	15
2	?

- a. Use the linear regression program to graph a line on the TI84.
- b. Trace along the line or use the table to predict the missing data.

a. TI84 Program Instructions

- 1) Turn on the Stat Plot

`Stat Plot`      `Enter`      On

Type:  
X list  $L_1$   
Y list  $L_2$   
Mark

- 2) Clear Lists

`Stat`      #4      `Enter`      `2nd 1` (clears list  $L_1$ )

`Stat`      #4      `Enter`      `2nd 2` (clears list  $L_2$ )

- 3) Put the coordinates of the points into the lists:

`Stat` #1 Edit

Enter data  
 $L_1$  x values  
 $L_2$  y values

4) Find the equation of the line:

Calculate #4 Lin Reg (ax + b)

Equation of the line  $y = ax + b$

5) Transfer the equation of the line to the y= screen:

#5 Statistics Eq #1

6) To see the graph:

a) Check Display Window Use table data

Set  $X_{\min}$ , to minimum value required on the x-axis according to your data  
For this problem,  $\min = 1$

Set  $x_{\max}$  to maximum value required on the y-axis according to your data  
For this problem,  $\max = \text{approx } 5$

$X_{\text{scl}} = 0.1$  (Will show 1- 5 in units of 0.1)

Do the same for the  $y_{\min}$ ,  $y_{\max}$ ,  $y_{\text{scl}}$  based on its data

**Alternative Method**  
**ZOOM STAT**

b)

7) To make a prediction:

Use   (Trace)

Choose #1 value

To make a prediction for 2 tons of weight, input 2

$X = 2$

View you prediction (y= ...)