*PEN-International 研 ▪ 会*

*教授 ▪ 人大学生数学: NTID(美国 人技 学院) 模式*

*教授: Daniele & Carr*

*六月 2004*

# 使用 TI-83 Plus 分析数据

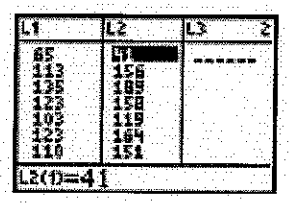
| 注意: 确信在你开始前 CLEAR 所有存在 Y= 里的函数. |
|---|

**例 1:** 测量了八只熊. 它们的胸围和质量如下表.
我们将会建立一个离散图表, 找寻线性回归方程并作出线性回归方程的图.

| x 胸围 (cm) | 65 | 113 | 135 | 123 | 103 | 123 | 110 | 48 |
|---|---|---|---|---|---|---|---|---|
| y 质量 (kg) | 41 | 156 | 189 | 158 | 119 | 164 | 151 | 15 |

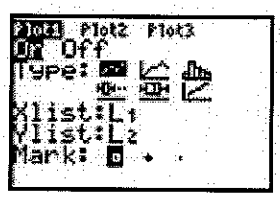
a. 输入胸围数据到 L1 质量数据到 L2.

- 按 STAT ENTER
- 输入胸围数据到 L1 并输入重量数据到 L2:




b. 要观察数据是否有关联, 我们可以制作一离散图. 按 2nd [STAT PLOT] ENTER 来建立离散图 1 (Plot1).

- 键入以下数值





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*A PEN-International Workshop*

***Teaching Mathematics to Deaf College Students: The NTID Model***

*Professors Daniele & Carr*

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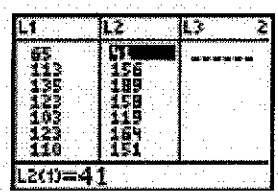
## Using the TI-83 Plus for Data Analysis

**Note:** Be sure to [CLEAR] any functions you have on the [Y=] list before you start this activity.

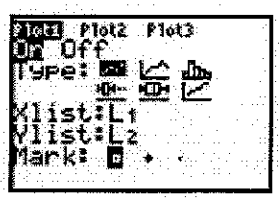
**EXAMPLE 1:** Eight bears were measured. Their chest size and mass are shown in the table below.
We will create a scatter plot, find the linear regression equation and graph the linear regression equation.

| x chest (cm) | 65 | 113 | 135 | 123 | 103 | 123 | 110 | 48 |
|---|---|---|---|---|---|---|---|---|
| y mass (kg) | 41 | 156 | 189 | 158 | 119 | 164 | 151 | 15 |

b. Enter the data for chest size in L1 and for mass in L2.
- Press [STAT] [ENTER]
- Enter the chest sizes in L1 and the weights in L2:




c. To see whether there seems to be a correlation, we will make a scatter plot. Press [2nd] [STAT PLOT] [ENTER] to set up Plot1.
- Enter the values shown below





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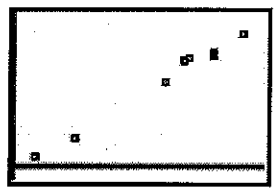
- 按 [ZOOM] **9:**ZoomStat 来看数据

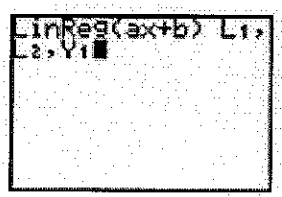


c. 像我们所期盼的, 看来熊的胸围和质量有正关联 **positive correlation**. 现在我们要来推出线性回归方程.

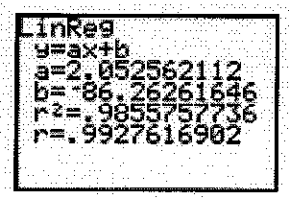
- 按 [2nd] [QUIT] 回到主屏幕.
- 按 [STAT] [▶] 并选 **4:**LinReg(ax+b)


- 键入

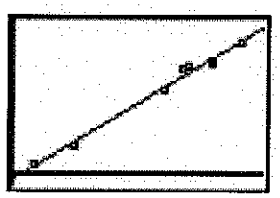
  [2nd] [L1] [,] [2nd] [L2] [,] [VARS] [▶] [ENTER] [ENTER]




Then press [ENTER]




d. 按 [GRAPH] 来观察离散图上的线性方程.

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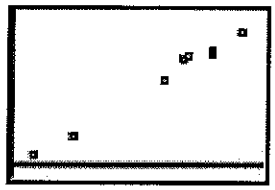
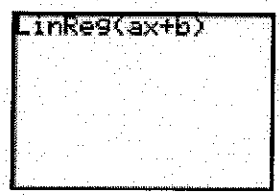
- Press [ZOOM] **9:**ZoomStat to see the result



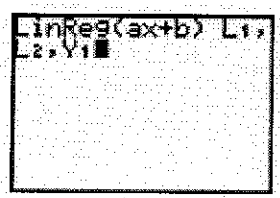
c. As we expected, there seems to be a **positive correlation** between a bear's chest size and his mass. Now we will find the linear regression equation for this data.

- Press [2nd] [QUIT] to go to the home screen.
- Press [STAT] [▶] and choose **4:**LinReg(ax+b)

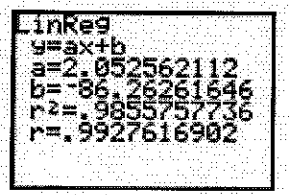



- Type

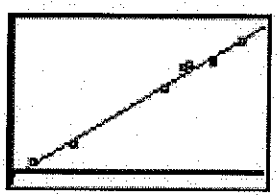
  [2nd] [L1] [,] [2nd] [L2] [,] [VARS] [▶] [ENTER] [ENTER]




Then press [ENTER]




d. Press [GRAPH] to see the linear regression equation on the scatter plot.

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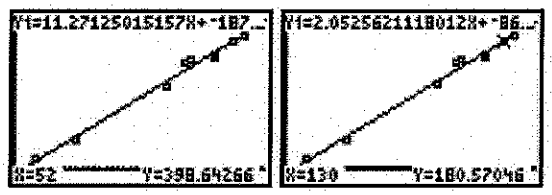
e. 推算一只胸围 130 cm 的熊的体重.

- 按 TRACE 并用 ▲ 或 ▼ 来移动光标到线性线上
- 输入 130 来看结果:




这样我们可以预测一只胸围 130 cm 的熊大概能重 181 kg.

一些可以提给学生的问题:

- 解释什么是数据对 (113, 156).
- 写下线性方程式, 四舍五入系数到 2 个小数位.
- 分析回归线的斜度.
- 解释在这里斜度的涵义.
- 解释在这个问题中关联系数的涵义.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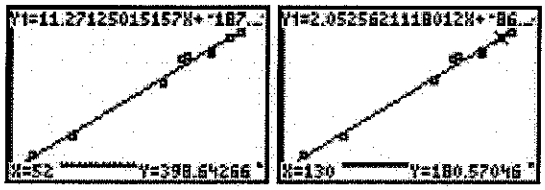
e. Predict mass of a bear with a chest size of 130 cm.

- Type [TRACE] and use [▲] or [▼] to put the cursor on the regression line
- Type the number 130 to see the result:




We can predict that a bear with a chest size of 130 cm would have a mass of about 181 kg.

## Good Student Questions:

- Explain the meaning of the data pair (113, 156).
- Write the equation of the linear regression, rounding coefficients to two decimal places.
- Identify the slope of the regression equation.
- Explain the meaning of the slope in this situation.
- Explain the meaning of the correlation coefficient in this problem.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