

## 2.2 Finding Equations of Linear Models

Study 2.2 # 3, 17 or 19, 23

accept approximate answers

Appendix B, p. 638 - 641

Class Notes: Prof. G. Battaly, Westchester Community College, NY

 College Algebra Home Page

 Homework Problems

## 2.2 Finding Equations of Linear Models

Speed (ft/s)	Ave Stride Rate (steps/s)	
	Women	Men
15.86	3.05	2.92
16.88	3.12	2.98
17.5	3.17	3.03
18.62	3.25	3.11
19.97	3.36	3.22
21.06	3.46	3.31
22.11	3.55	3.41

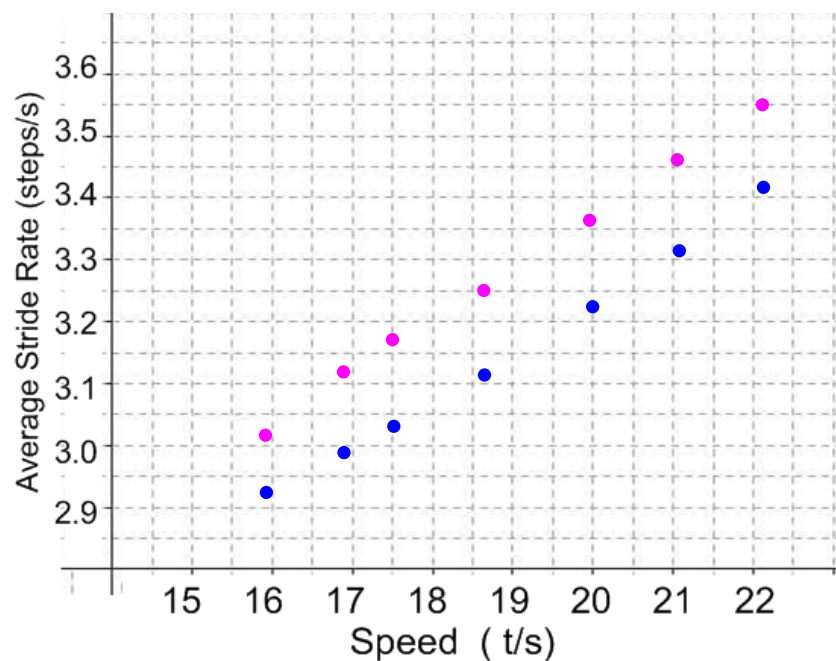
$$y = ax + b$$

$$a = 0.080$$

$$b = 1.766$$

$$y = 0.08x + 1.77$$

$$y = 0.079x + 1.657$$



Class Notes: Prof. G. Battaly, Westchester Community College, NY

## 2.2 Finding Equations of Linear Models

on Calculator:

Enter Data

1. Use **STAT/EDIT** to enter data into L1, L2, and L3

Plot Women's Data

1. Use **2nd Y=** to get to Stat Plot 1
2. Turn ON, then select 1st Type, which is a scattergram
3. Enter L1 for xlist and L2 for ylist

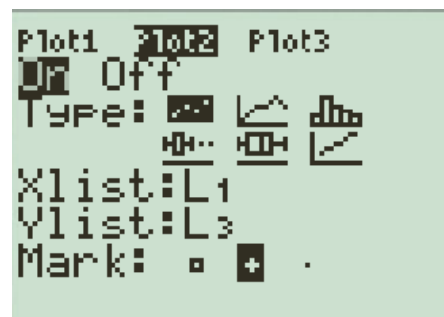
Plot Men's Data

1. Arrow up and select Stat Plot 2
2. Turn ON, then select 1st Type, which is a scattergram
3. Enter L1 for xlist and L3 for ylist

Graph the scattergrams

**ZOOM/ STAT**

(this selects the correct axes)



Class Notes: Prof. G. Battaly, Westchester Community College, NY

[College Algebra Home Page](#)

[Homework Problems](#)

## 2.2 Finding Equations of Linear Models

Find Regression Equation (best fit line)

1. STAT/ CALC
2. Select: 4:LinReg(ax+b)
3. After LinReg(ax+b), use 2<sup>nd</sup> 1, the comma key, and 2<sup>nd</sup> 2 to get L1,L2 to get:  
LinReg(ax+b) L1,L2

The slope, a, and intercept, b, is calculated.

Repeat the above steps, using L1 and L3 to find the regression line for the Men's Data.

Plot Regression Line with Scattergram

Either

Enter the regression equations into Y1 yourself.

Or

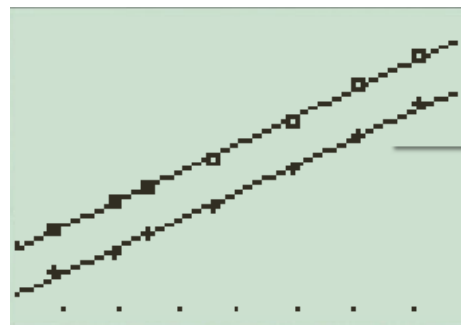
At step 3 above enter Y1 after the L1 and L2:

LinReg(ax+b) L1, L2, Y1

To get Y1 entered:

Select VARS/Y-VARS/1:Function/1:Y1

Repeat the above steps, using L1 and L3 and Y2 to plot the regression line for the Men



Graph the scattergrams  
ZOOM/ STAT

Class Notes: Prof. G. Battaly, Westchester Community College, NY

## 2.2 Finding Equations of Linear Models

	Ave Stride Rate (steps/s)	
Speed (ft/s)	Women	Men
15.86	3.05	2.92
16.88	3.12	2.98
17.5	3.17	3.03
18.62	3.25	3.11
19.97	3.36	3.22
21.06	3.46	3.31
22.11	3.55	3.41

$$y = ax + b$$

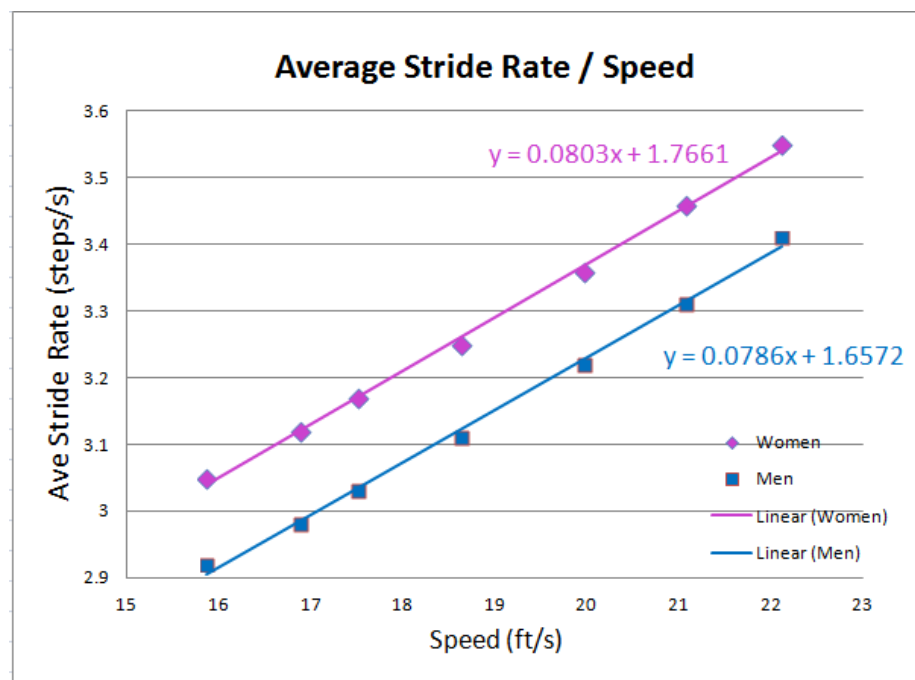
$$a = 0.080$$

$$b = 1.766$$

$$y = 0.08x + 1.77$$

$$y = 0.079x + 1.657$$

in Excel:



Class Notes: Prof. G. Battaly, Westchester Community College, NY

