Calculating r

NY Yankees 1995-2005

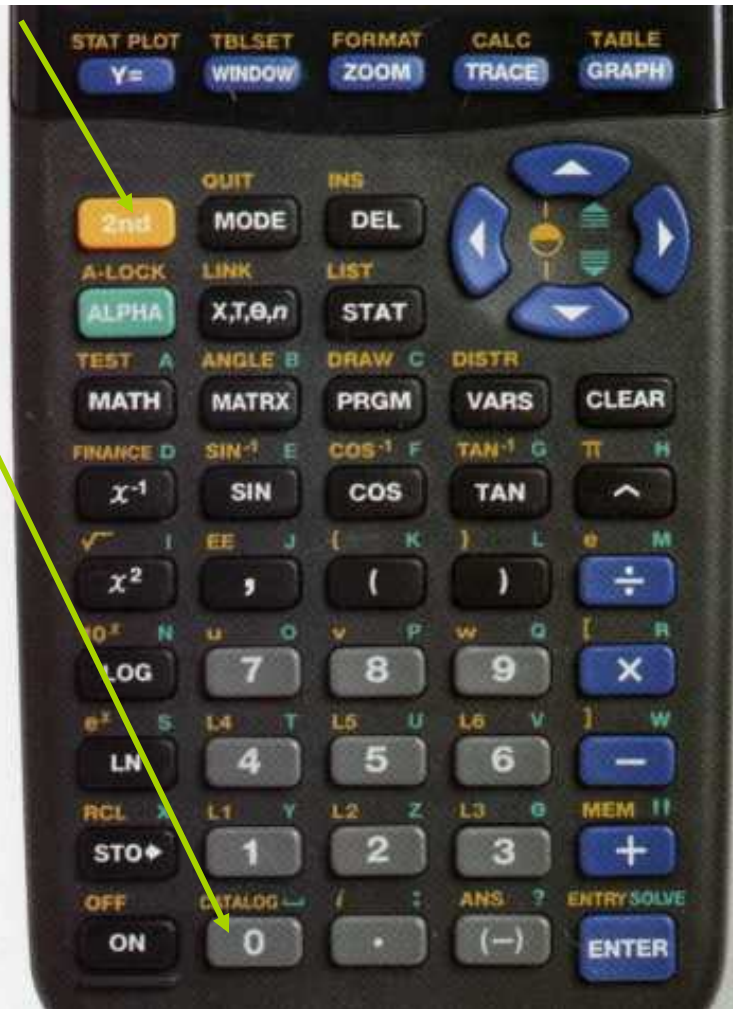Here is the scatterplot of runs scored vs wins. We are now going to find a shorter way of calculating r.

Runs Scored	Wins
886	95
897	101
877	101
897	103
804	95
871	87
900	98
965	114
891	96
871	92
749	79

In order to do this, follow these steps on your calculator. You will only have to do them once.

1.

2.

```
CATALOG          A
 Degree
 DelVar
 DependAsk
 DependAuto
 det(
 DiagnosticOff
▸DiagnosticOn
```

After steps 1 and 2, scroll until you see the words **DiagnosticOn** and hit Enter twice until you see the word **Done** (see below).

```
DiagnosticOn
           Done
_
```

This will set the calculator to compute and display the value of r

Now we can find the correlation coefficient r. Here is how the correlation is done:
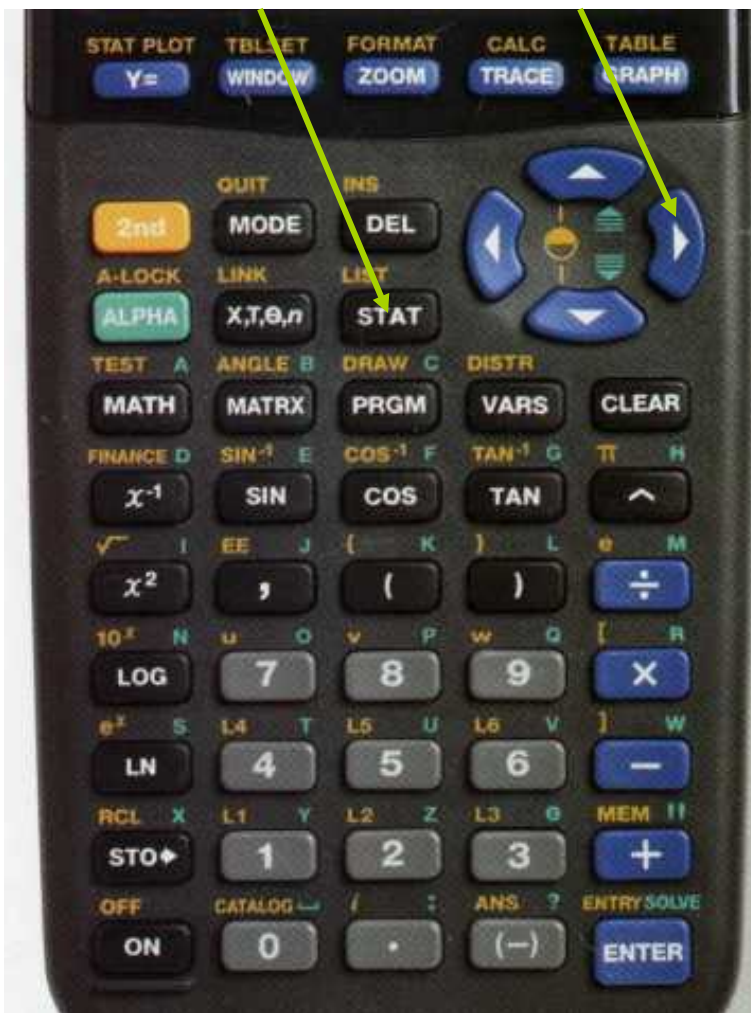
1. 2.

Should give you this screen:

```
EDIT CALC TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7↓QuartReg
```

In the above menu, choose **4** then enter your lists this way (presuming your lists are **L₁** and **L₂**):

$$LinReg(ax+b)\ L_1,$$
$$L_2, Y_1$$

To get **Y₁**, do the following:

Now we can find the correlation coefficient r. Here is how the correlation is done:

1.   2.

Should give you this screen:

```
EDIT CALC TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7↓QuartReg
```

In the above menu, choose **4** then enter your lists this way (presuming your lists are **L₁** and **L₂**):

```
LinReg(ax+b) L₁,
L₂,Y₁
```

```
VARS Y-VARS
1:Function…
2:Parametric…
3:Polar…
4:On/Off…
```

⟶

```
FUNCTION
1:Y₁
2:Y₂
3:Y₃
4:Y₄
5:Y₅
6:Y₆
7↓Y₇
```

Now we can find the correlation coefficient r. Here is how the correlation is done:

1.   2.

Should give you this screen:

```
EDIT CALC TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7↓QuartReg
```

In the above menu, choose **4** then enter your lists this way (presuming your lists are L_1 and L_2):
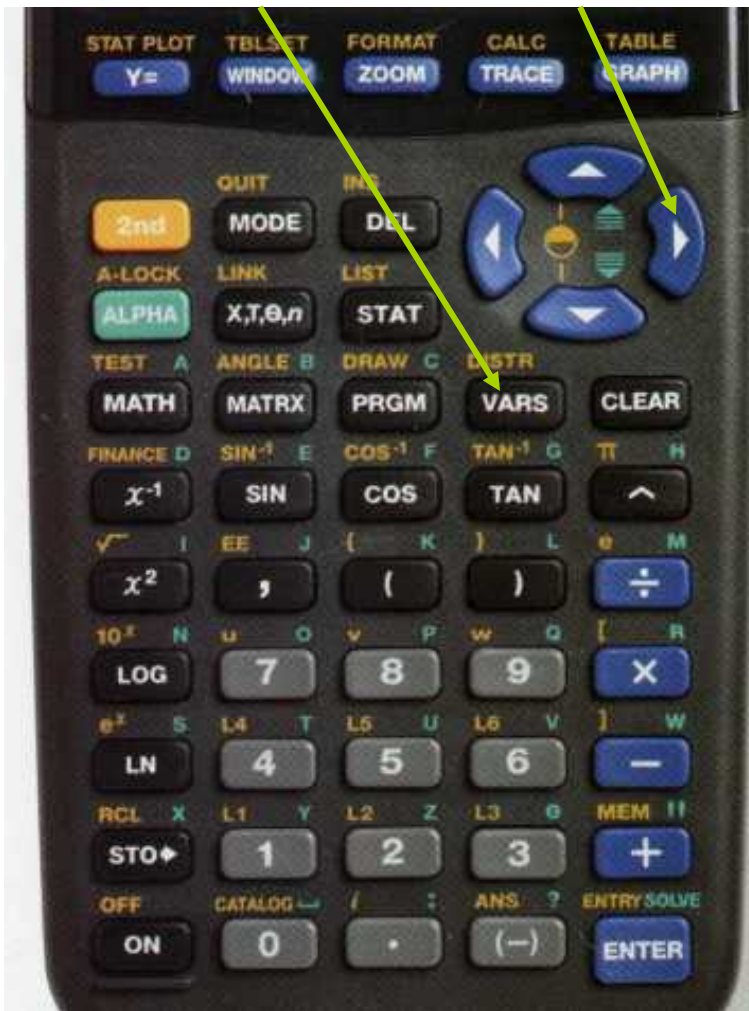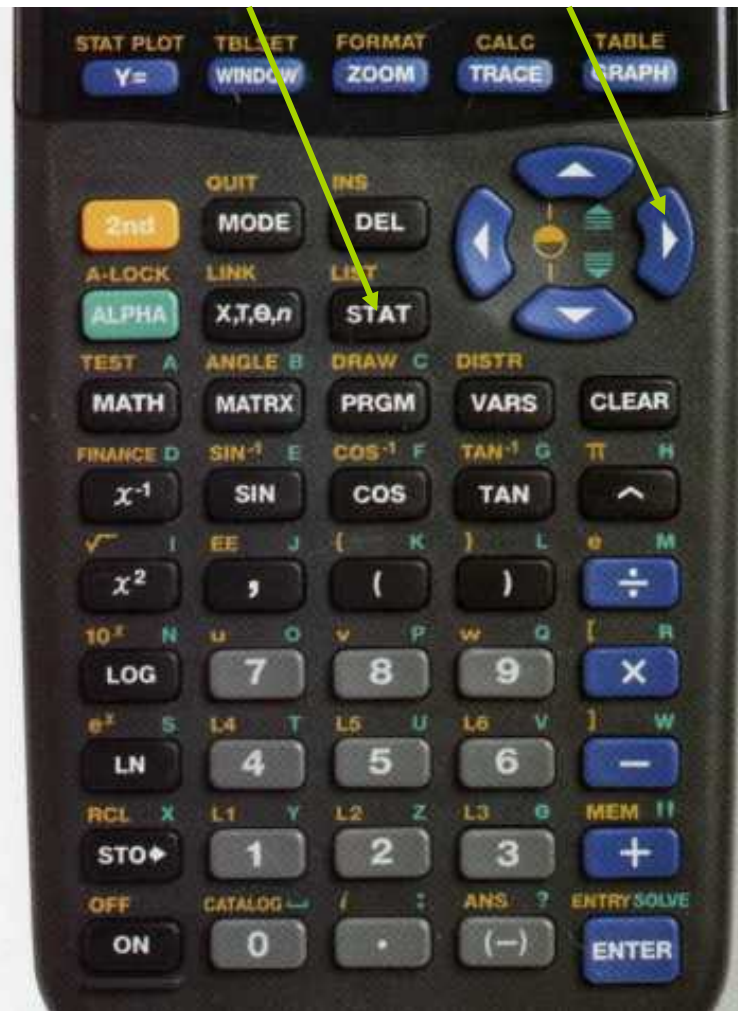
```
LinReg(ax+b) L₁,
L₂,Y₁
```

After this, hit enter and you will see this screen:

```
LinReg
y=ax+b
a=.135682946
b=-22.05834047
r²=.70213648
r=.8379358448
```

Notice that r is at the bottom.