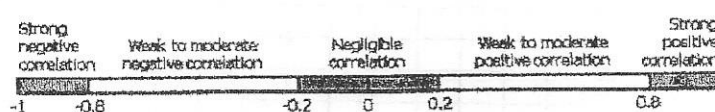


The correlation coefficient is found by _____.	finding the average product of the z-scores (standardized values) $r = \frac{\sum Z_x Z_y}{n-1}$
It's value ranges from _____, it has no _____, and is immune to changes of _____.	-1 to +1 units scale and/or order
Perfect correlation $r =$ _____, occurs only when _____.	± 1 the points lie exactly on a straight line (you can perfectly predict one variable knowing the other)
No correlation $r =$ _____, means that knowing one variable gives you _____.	0 no information about the other variable.

Review the scale below then use it to predict $r =$ _____, and describe the strength of the correlation A-F below.

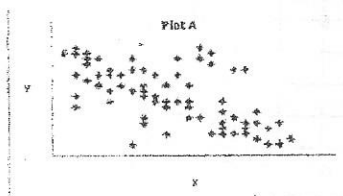


example

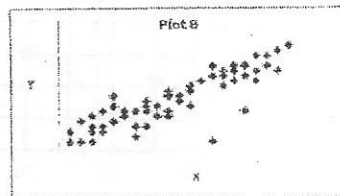
$r = 0.3$, weak positive

The six scatterplots below illustrate different correlation values.

$r = -0.23$
weak negative



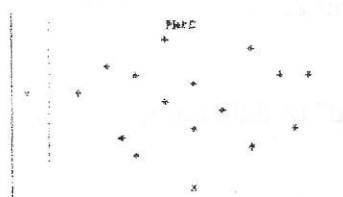
$r =$



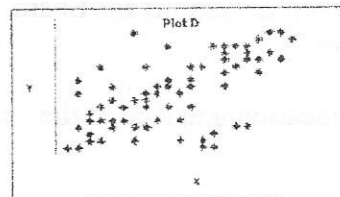
$r =$

$r = 0.88$
somewhat strong positive

$r = -0.07$
weak negative



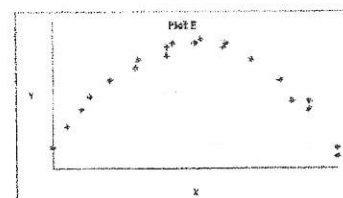
$r =$



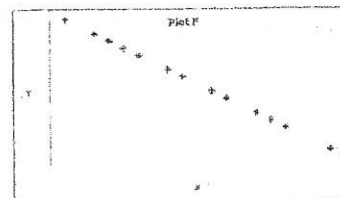
$r =$

$r = 0.6$
weak positive

$r = 0$
no correlation



$r =$



$r =$

$r = -1$
strong negative

Fortunately we do not have to do the correlation coefficient, r , calculation by hand. With your calculator:

TI83/84 (this assumes the explanatory variable is input to L1 and the response variable to L2)

Do once and/or after memory reset: 2nd, 0 (Catalog), x^{-1} (alpha D), down arrow to select DiagnosticOn, ENTER, ENTER. You should see DiagnosticOn Done on your screen.

Now for correlation: STAT, arrow to CALC, choose 8:LinReg(a+bx), 2nd, 1 (L1), ",", 2nd, 2 (L2), ENTER

TI89 (this assumes the explanatory variable is input to list1 and the response variable to list2)

From the Statistics Editor, press F4 (Calc), arrow down to 3:Regressions, press right arrow, select 1:LinReg(a+bx), ENTER, X List: list1 [2nd, - (VAR-LINK select list1 ENTER)], Y List: list2, Store RegEqn to: y1(x), Freq: 1, ENTER.

A18

1) pg. 164-168 / 6, 11, 35, 33, 34 (in that order). 2) Play with the correlation tools (see A18 on website).