

Are We Really Similar

Pair up with a partner. Using the measuring tape, measure each of the listed body parts to the nearest tenth of a centimeter.

Body Measurements	Your Measurement	Your Partner's Measurements	Ratio $\frac{\text{Partner}}{\text{Your}}$	Ratio as a decimal
Height				
Length of foot				
Hand Span				
Waist				
Length of Nose				
Distance between arm span				

Enter the data for your measurements in L1.

Enter your partner's measurements in L2.

Write the ratio of your measurements to your partner's measurements in the table.

Set the calculator to find the ratio in decimal. Set $L3 = L2/L1$.

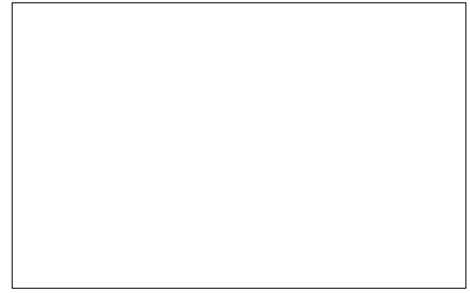
Does it appear that the ratio of the two measurements are similar for all the various measurements? Why or why not?

Let's find the average ratio. From the homescreen press 2nd STAT (LIST) and move to MATH and select 3 and complete the line by typing mean (L3) . Press ENTER.

Average Ratio = _____

Set up a plot to make a scatter plot. Set up an appropriate window for the data.

Create a scatter plot of your measurements vs. your partner's measurements.
Make a sketch of your scatterplot.



Does the graph indicate that there is a relationship between your measurements and your partner's? Why or why not?

Fit a line using the manual fit command of the calculator. Store the equation of the line in Y1.

Equation: _____

Notice that the average ratio is approximately equal to the coefficient of x (number in front of x).

You can use this line to predict other measurements.

Measure these body parts to complete column 2.

Body Part	Your Measurement	Your Partner's Measurement (Prediction)	Your Partner's Actual Measurement
Height of ear			
Height of knee from floor			
Width of shoulders			

Use the equation to predict your partner's measurements for same three body parts.

Measure your partner's actual body parts and compare them to your predictions. Explain your results.