

Do I Compare the Same in Other Units?

1. Each group needs a long piece of paper and a straw and measuring tape. Each person needs to lay down on the sheet and mark their height. Then use the measuring tapes, pencils, and your foot to find the your height and the length of your foot. Record them in the table.

	My Foot	Straw	Inches	Centimeters
Length of foot	1			
Height of person				
Ratio of Foot Length to Height				
Ratio in Decimal Form				

2. Calculator Directions:
 - a. TI-73 Calculators:
 - i. Place the length of your foot in L1 and the height in L2.
 - ii. Use the calculator along with the b/c key to simplify the ratios requested in the chart.
 - iii. Set up L3 to divide L1 by L2. (Remember to move to the top of L3, type in L1/L2 and press enter to complete this task.)
 - iv. If the ratios are different try averaging the ratios to see what the average ratio is these measurements. From the home screen type 2nd STAT and move to the MATH column and select 3. mean(. Then enter the name L3 after the parentheses and type a closed parentheses. [mean(L3)] Then press ENTER.

3. Questions to think about:
- a. What do the decimal expressions suggest about the ratios?
 - b. How close do they need to be to consider them the “same”?
 - c. How do your ratios of measurements using the straw and foot compare to the ratios with the centimeters and inches?
 - d. Do you see any patterns in the ratio column? Try to summarize what you see.
 - e. When you converted the ratios to decimal what additional pattern(s) did you see?
 - f. When you found the average of all the decimal expressions for your ratios, what did this tell you?
 - g. Convert this average back to a fraction. What does this tell you about the comparison of the length of your foot to your height?
 - h. What does this tell you about the type of measuring device you choose?
 - i. If you used different units to measure the length of your foot and your height, what would the ratio be? What would the decimal form for that ratio be?
 - j. Does it matter what unit we use to form a ratio?