

Linear Measure the Ancient Indian Way

Many ancient cultures used body parts as units of measure. For example, the English unit of length, the foot, was based on the length of a person’s foot. Three of the units of length used in ancient India were the *āṅgula* (digit), the *aratni* or *hasta* (cubit or elbow-length), and the *purusha* (person-height).



digit



cubit



person-height

A digit is the width across a finger, a cubit is the length from the elbow to the tip of the longest finger, and a person-height is the measure of a person from foot to upraised hands.

Pick three other objects in the classroom to measure. Choose the most appropriate unit of length among digit, cubit, and person-height.

	Object	# of units	unit
1			
2			
3			

Complete the first column of the table below by measuring your own cubit using your digit as the unit and your own person-height in terms of your cubits. If you wish, you can use two or three fingers next to each other to measure your cubit. To measure your own person-height, you might want to mark it off first on the floor or a chalkboard. Next fill in the other columns with the results from four other students. Then compute the average for each row.

	Self	Student 1	Student 2	Student 3	Student 4	Average
Length of cubit in digits						
Length of person-height in cubits						

In ancient India, there were 24 digits per cubit.* How does this compare to the measurement of your own cubit? The other students? The average?

There were 5 cubits per person-height.* How does this compare to what you found above?

Compare your elbow-length (cubit) with at least two other students. Are they all the same length?

If you were purchasing something like fabric or fencing for a certain price per cubit, whose cubit would you want to use? Why?

If you were selling something like fabric or fencing for a certain price per cubit, whose cubit would you want to use? Why?

* *Mathematics in India*, by Kim Plofker, Princeton University Press, 2009, p. 18.

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