Early Civilisations

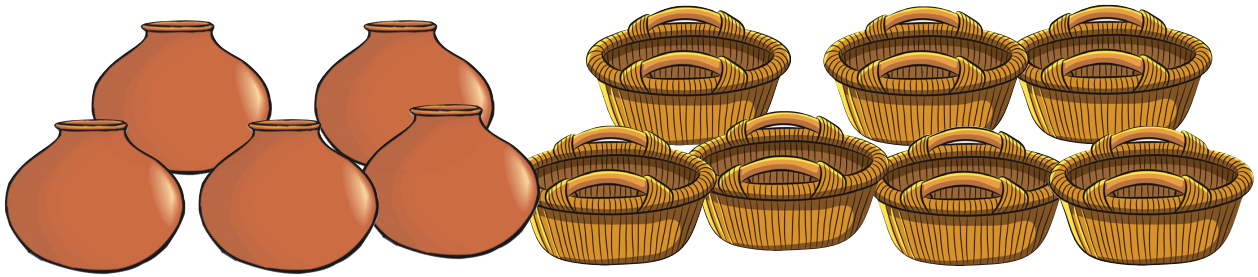
Learning Objective:

To find out about mathematical understanding in early civilisations.

NEXT

Imagine you are a trader in ancient Sumeria. You take your clay pots and baskets to trade at the marketplace. You trade a few during the day and keep track of what you have sold. You want to record what you have sold but numbers (not to mention pens and paper!) haven't been invented yet.

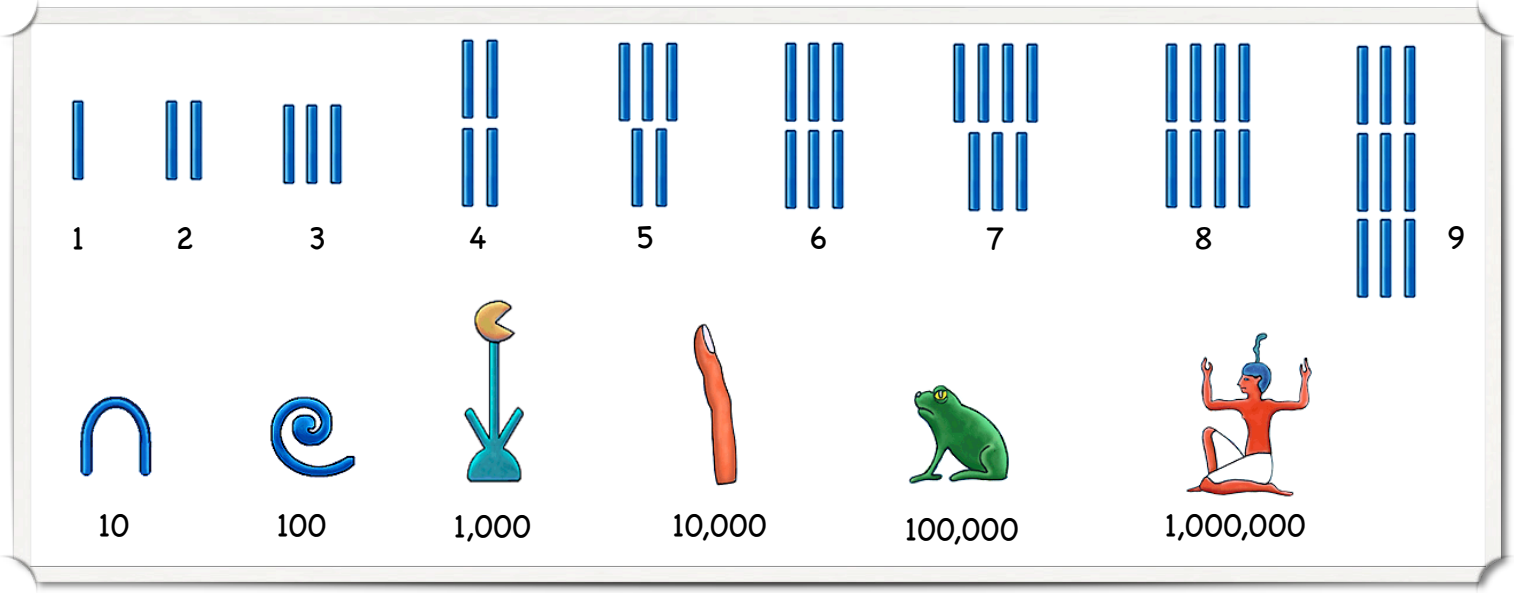
What would you do to record that you have sold five clay pots and seven baskets?



BACK

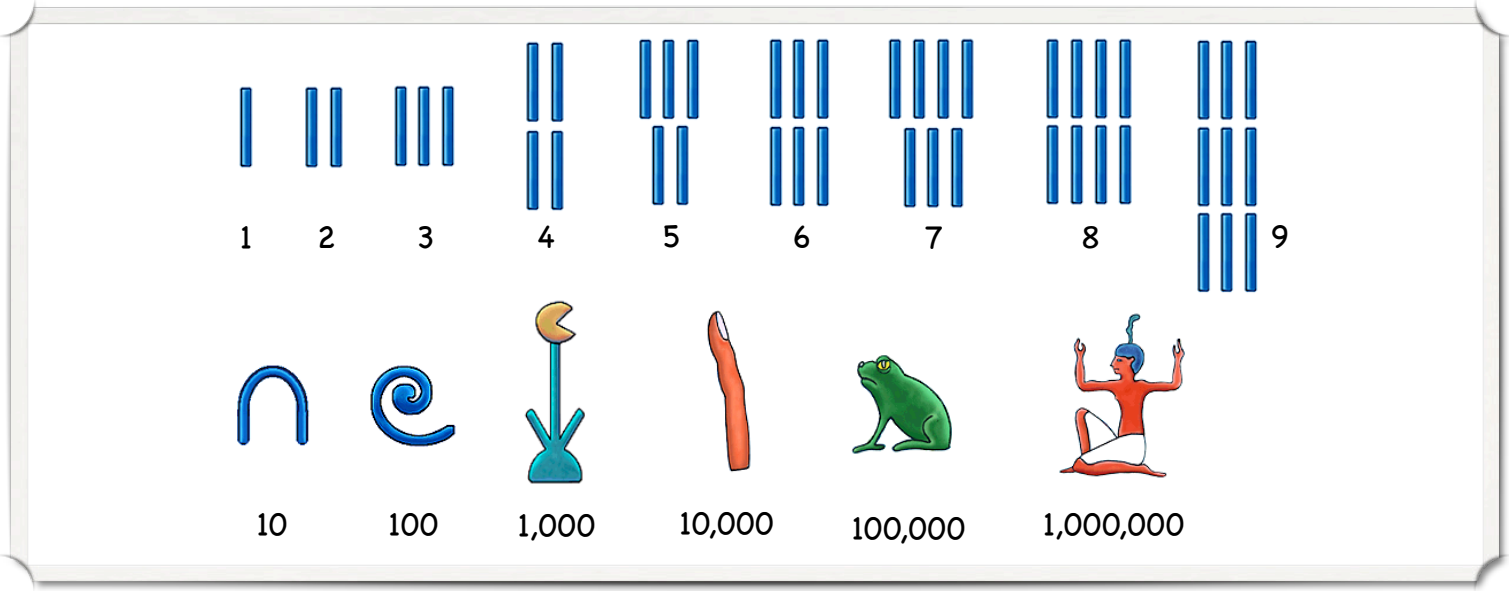
NEXT

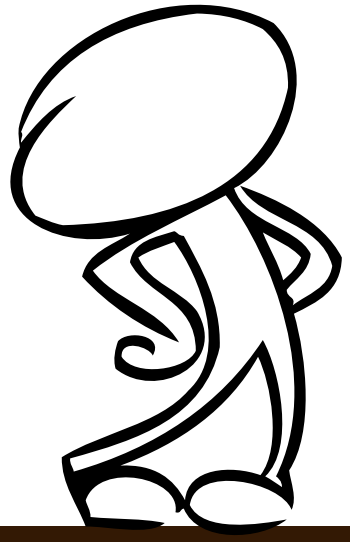
Each early civilisation devised their own number systems so they could keep records. Some were very similar to ours, like the ancient Egyptian numbers. They used a decimal system (meaning a base of 10) like we do.



Can you work out what this number would be?

= 2345





Even though their numbers are different to ours, the basic maths is the same.

BACK

NEXT

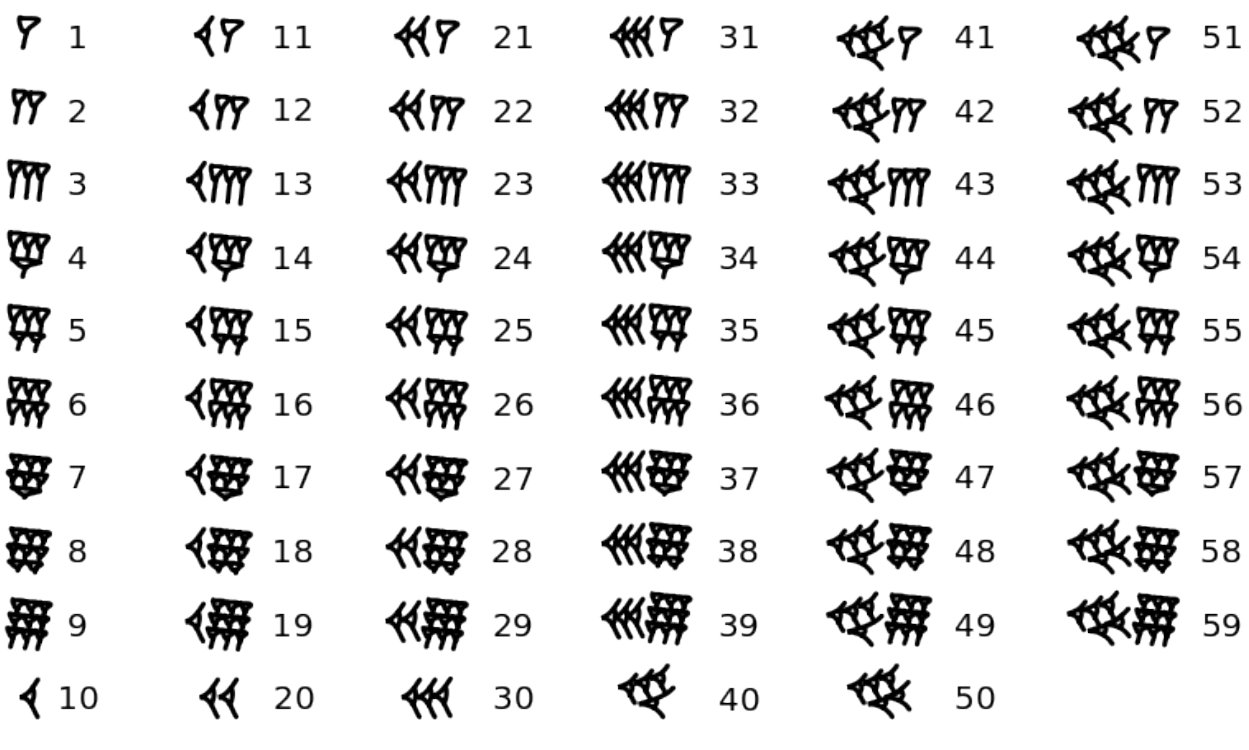
The Sumerians, however, had a different system. Their system had a base number of 60 instead of 10 like ours. This meant a 1 where our tens column is would represent 60 in Sumerian numbers. This also meant that they had 59 numbers for their units column.

Modern number system		
hundreds	tens	units
	6	3

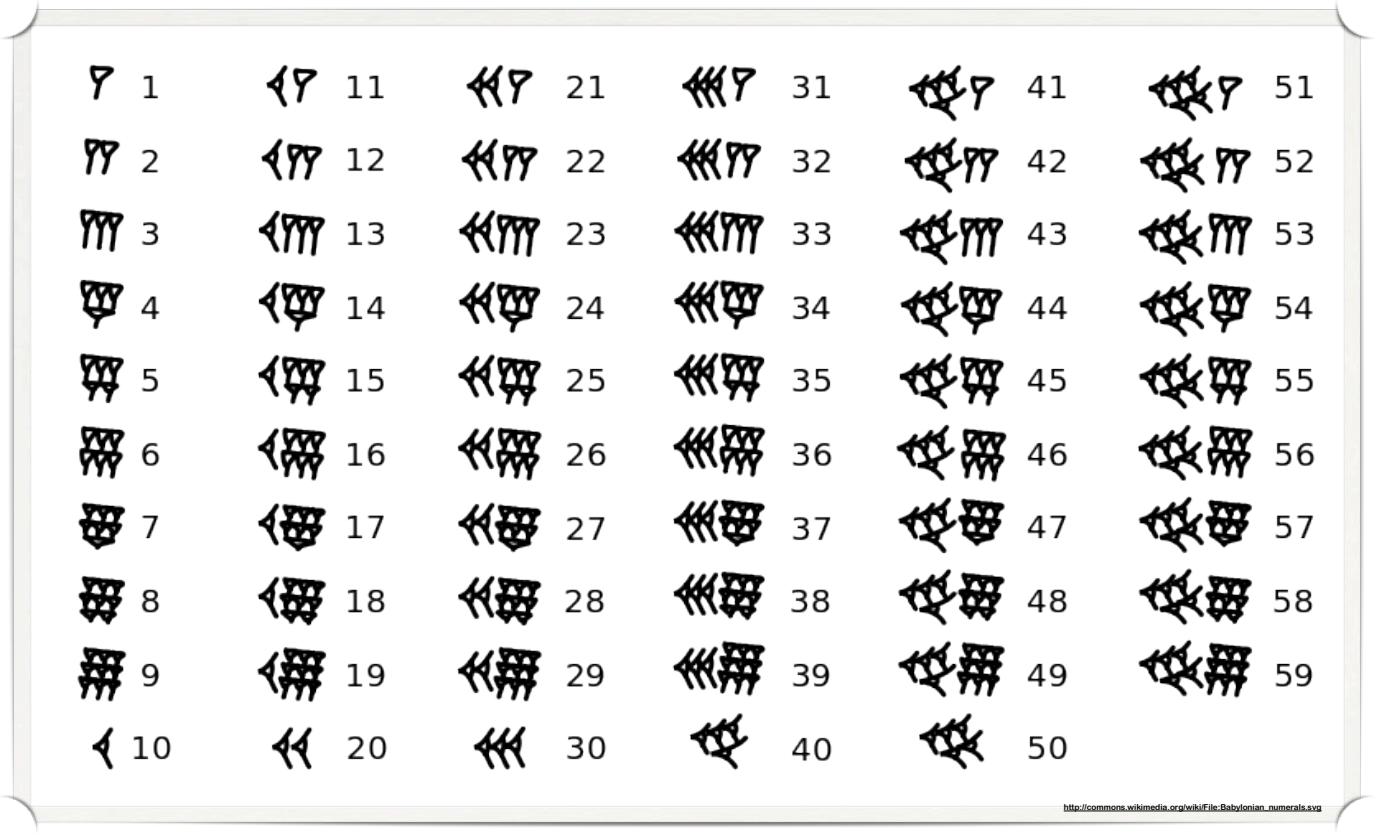
Sumerian number system		
sixty sixties	sixties	units
	1	3

Both these numbers represent the same amount but instead of six lots of ten making sixty, they use one lot of sixty.

These are the Sumerian numbers up to 59. Can you see how they work?



After 59, the 1 would move into the next column to show that there was one lot of 60. The columns were split by a space.



61

70

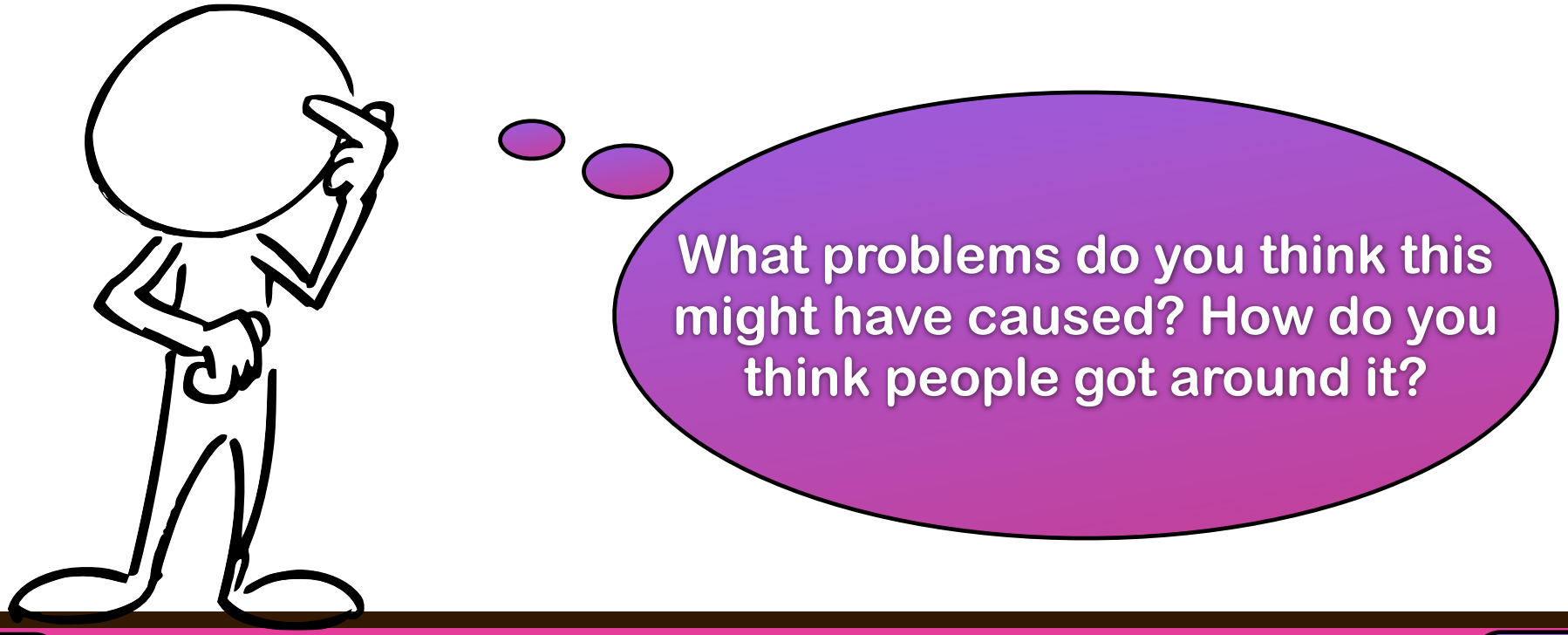
72

90

BACK

NEXT

There was one problem with the Sumerian number system. There was no number for zero. This meant that the numbers for 1 and 60 were exactly the same because the 1 moved into the next column to show one lot of sixty but there was no placeholder to show that it had moved.

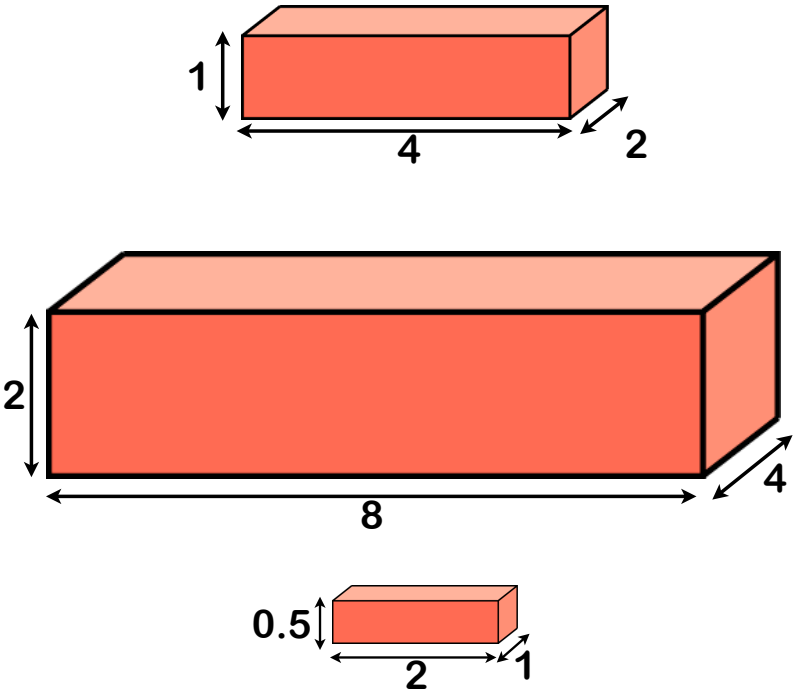


It wasn't only numbers that showed early civilisations understood maths. Archaeologists have found a system of weights that the Indus Valley civilisation used, probably for weighing and recording commodities for trade.

These weights were found during an excavation in Harappa. The smallest weight found was 0.85g. Every weight was then doubled in weight until the stone weighed 54g. There were larger weights too although they didn't follow such a clear pattern.

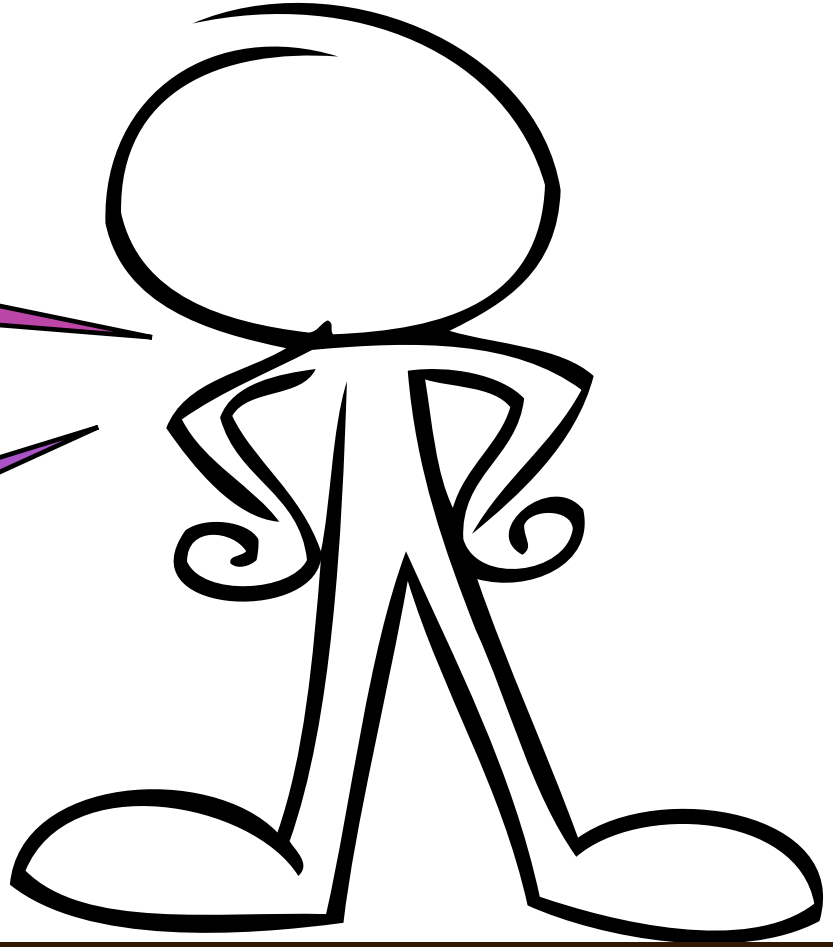
The Indus Valley civilisation also used rulers. Different rulers have been found in different areas that each have different measurements. Some had divisions that were 6.7mm, some were 1.7mm and some were 9.3mm.

They also understood ratio and used this to make bricks. Each brick was four units wide, two units deep and one unit high. The units could then be multiples of different numbers. They could make bricks of the same ratio but different sizes using this method.



How do you think the Indus Valley civilisation managed to create accurate rulers when there was nothing to check they were accurate?

How do you think they managed to make weights that were equal and in proportion?



BACK

NEXT