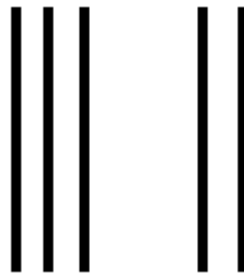


VISUAL MULTIPLICATION WITH LINES (VEDIC MULTIPLICATION)

There is a way of multiplying using lines that just involves adding instead of multiplication. It is a long method, but you might find it useful if you are really struggling.

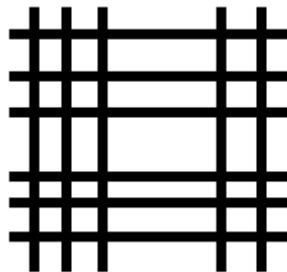
Let's look at the calculation 32×33 .

First you have to draw lines to represent the numbers. Vertically draw three lines, then two. These represent the thirty and the two of the number thirty-two. The diagram below shows you what it should look like. Be sure to leave a slight gap between the two sets of lines.

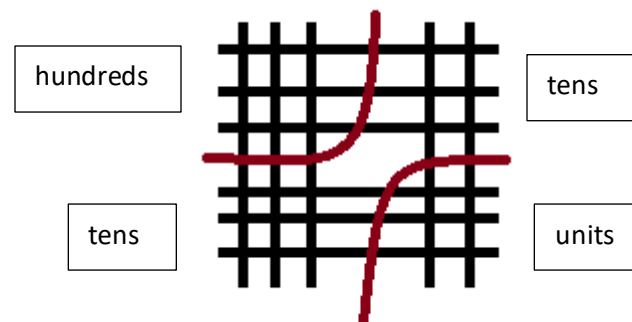


Next, draw three lines horizontally for the thirty and three more lines horizontally for the three. Be sure to leave a slight gap between the two sets of horizontal lines.

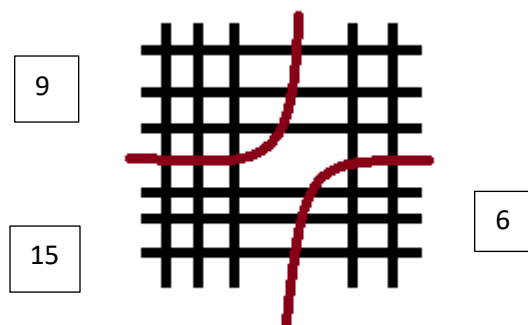
This should give you a picture like the one below.



Now beginning in the space **between the two sets of horizontal lines** draw lines to separate the bottom left-hand corner and the top right hand corner. This separates the diagram into units, tens and hundreds.



Now, you can add up the number of times the lines cross (intersect) in each area.



This means you have 6 units, 15 tens and 9 hundreds. You can write this as:

$$\begin{array}{r} 6 \\ 150 \\ 900 \end{array}$$

When you add these numbers, the sum is 1056, which is the answer to the calculation 32×33 .