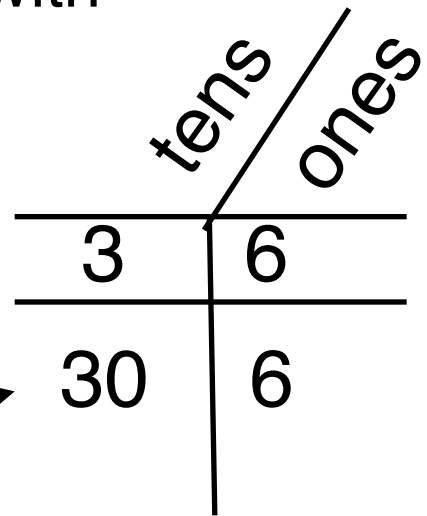


Distributive Method

Example: 36×8

The difficult number to work with 36

- 1 Break apart the big number with expanded form



Then we show the value of each

- 2 Then we multiply each by the other multiplier, 8.

$$(30 \times 8) + (6 \times 8)$$

- 3 Work it out!

30	6
<u>x 8</u>	<u>x 8</u>
240	48

- 4 Add together

240
<u>+ 48</u>
288

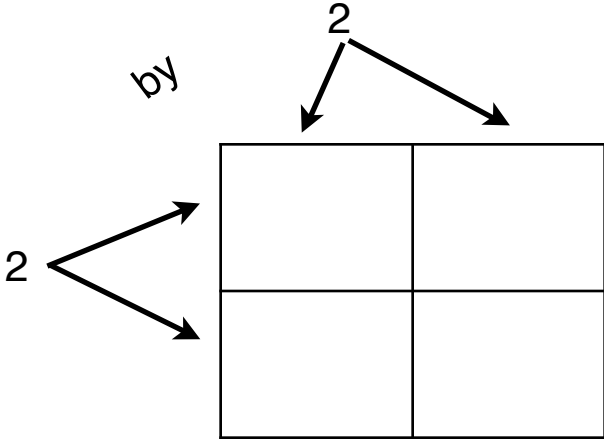
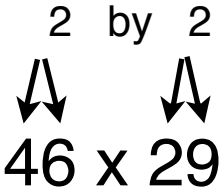
Distributive Property:
 $(30 \times 8) + (6 \times 8) = 288$

Array Method

example: 46×29

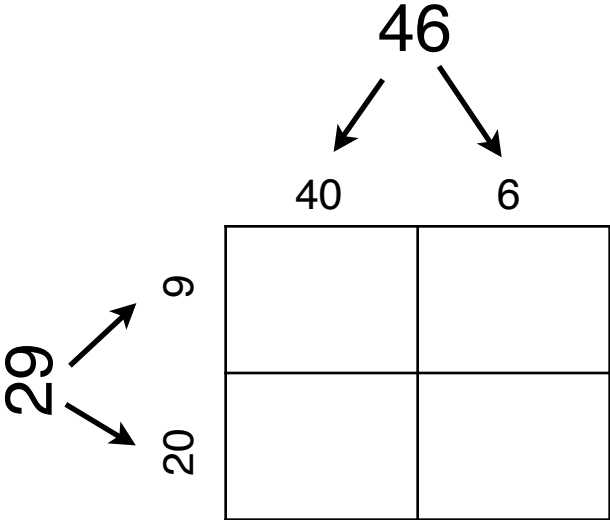
1

Create an array or grid with the number of digits you are multiplying by



2

Use expanded form and write the values on the columns and rows.



3

Multiply each where the columns and rows match.

	40	6
9	$\begin{array}{r} 40 \\ \times 9 \\ \hline 360 \end{array}$	$\begin{array}{r} 6 \\ \times 9 \\ \hline 54 \end{array}$
20	$\begin{array}{r} 20 \\ \times 40 \\ \hline 800 \end{array}$	$\begin{array}{r} 20 \\ \times 6 \\ \hline 120 \end{array}$

4

Add all the answers together.

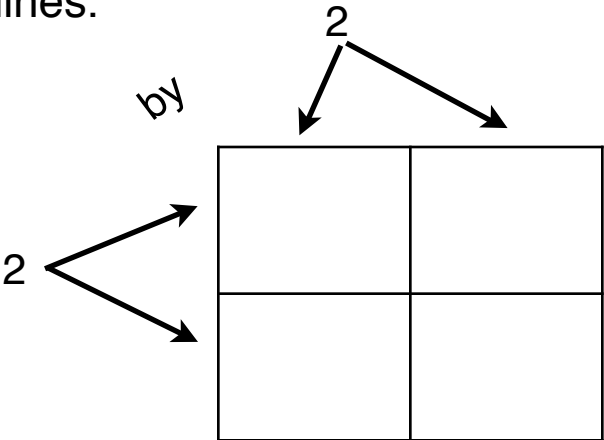
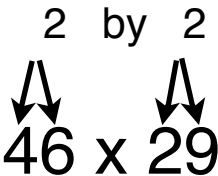
$$\begin{array}{r}
 360 \\
 54 \\
 800 \\
 + 120 \\
 \hline
 1,334
 \end{array}$$

Lattice Method

example: 46 x 29

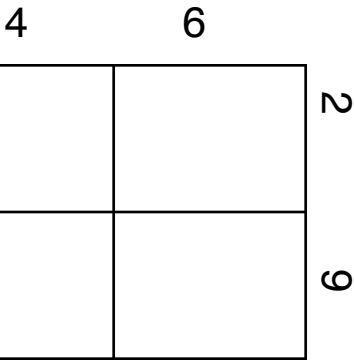
1

Create an array or grid with the number of digits you are multiplying by with diagonal lines.



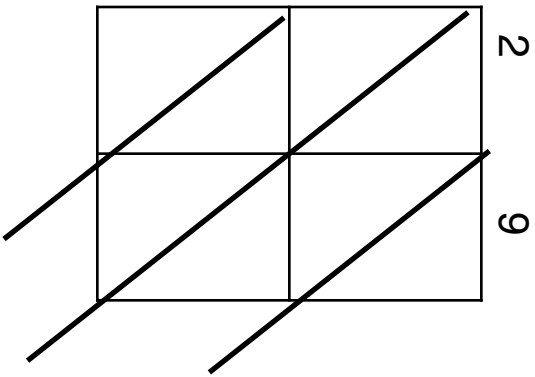
2

Label the grid with the digits of each number.



3

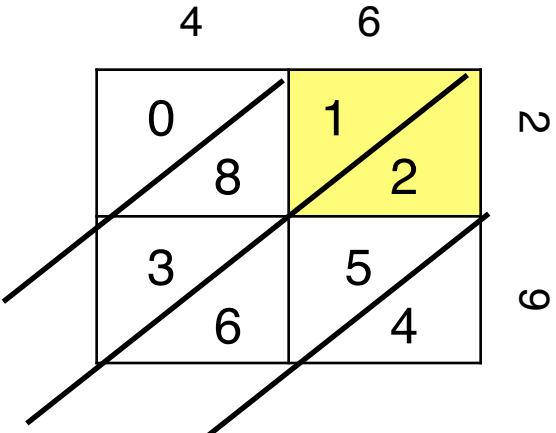
Create diagonal lines going from top right to bottom left connecting the corners. 4 6



4

Multiply each where the columns and rows match. Only put one digit in each half of the square.

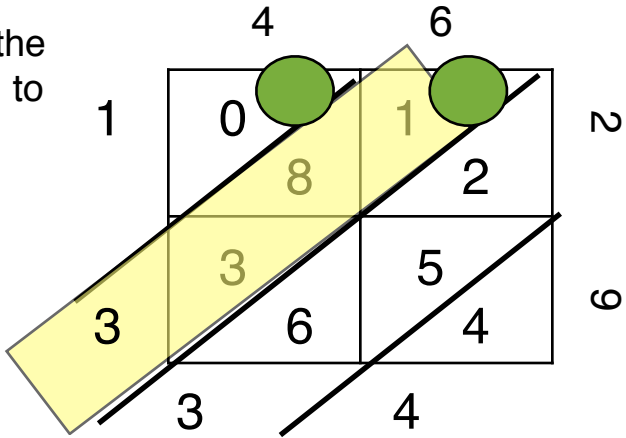
example: $6 \times 2 =$ 12



5

Add the numbers in the diagonal rows starting at the bottom right. . If you need to carry, more it up.

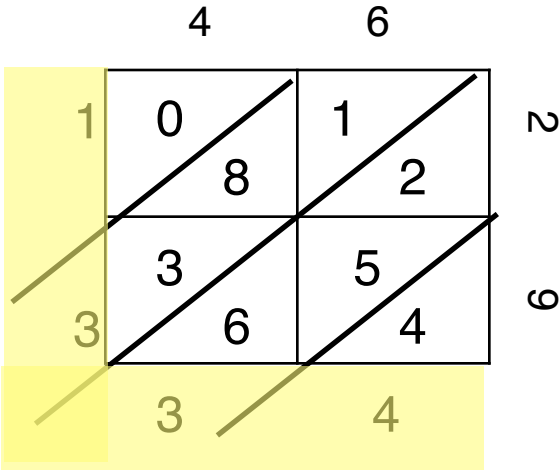
example: $2 + 5 + 6 = 13$
the 1 moves up



6

The answer is the outside number .

$46 \times 29 = 1,334$



Complete with the **Distributive Method**

$33 \times 22 =$

$54 \times 81 =$

$28 \times 44 =$

Complete with the *Array Method*

$$\begin{array}{r} 28 \\ \times 61 \\ \hline \end{array}$$

$$\begin{array}{r} 25 \\ \times 32 \\ \hline \end{array}$$

Complete with the Lattice Method

$$\begin{array}{r} 42 \\ \times 54 \\ \hline \end{array}$$

$$\begin{array}{r} 13 \\ \times 31 \\ \hline \end{array}$$

