

Oceans Apart

Activity

Different cultures have developed different ways to work out multiplication problems. Here are two ways of multiplying.

To solve 28×52 , an Egyptian method is to start with 1×52 and keep doubling the first factor until it reaches the largest double that is less than 28.

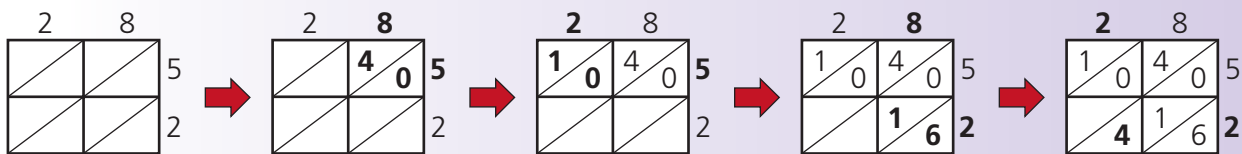
$$\begin{aligned} 1 \times 52 &= 52 \\ 2 \times 52 &= 104 \\ 4 \times 52 &= 208 \\ 8 \times 52 &= 416 \\ 16 \times 52 &= 832 \end{aligned}$$

16 x 52 is the largest double that is less than 28 x 52.

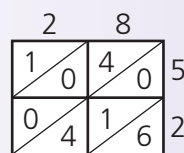
Now choose the equations whose first factors add up to 28. $16 + 8 + 4 = 28$, so:

$$\begin{array}{r} 16 \times 52 \quad 832 \\ 8 \times 52 \quad 416 \\ 4 \times 52 \quad 208 \\ \hline 28 \times 52 \quad 1456 \end{array}$$

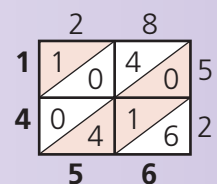
A Chinese method is to solve the problem using a grid:



So the finished grid is:



Then each set of diagonals is added up, starting from the right:



So the answer to 28×52 is 1 456.

1. Use each of these methods to solve:

- 22×63
- 34×48
- 54×36

2. Which method do you prefer? Why?