

20: $2.3 \times 10 = 2.30?$ $20.3?$

Everything in mathematics is done for a reason – most of the time. But don't expect teachers to obey silly rules like this – they are strictly for the likes of you.

$23 \times 10 = 230$ because 23 means $20 + 3$, and the 10 multiplies everything in the 23, i.e. both the 20 and the 3, gives 200 (10×20) and 30 (10×3) i.e. 230.

It is the same with 2.3×10 : 2.3 means $2 + 0.3$. Here, too, the 10 multiplies both the 2 and the 0.3, giving 20 (10×2) and 3 (10×0.3), namely, 23.

So if you want to *estimate* a multiplication there are many ways to do it. Here are some 'guesstimates' for 28×49 :

$$28 \times 49 = 28 \times (50 - 1) = 28 \times 50 - 28 \times 1 = 14 \times 100 - 28 = 1400 - 28 = 1372$$

$$28 \times 49 = (30 - 2) \times 49 = 30 \times 49 - 2 \times 49 = 3 \times 490 - 98 = 1372$$

or even

$$28 \times 49 \approx 30 \times 50 \approx 1500 \quad (\approx \text{stands for 'approximately').}$$

Can you easily see whether the accurate answer is larger or smaller than the 1500?