Solving Proportions

7th Grade

Two equal ratios, and the cross-multiplication that solves them.

If two ratios are equal, the cross products are equal. That turns a proportion into a one-step equation.

$$a/b = c/d \rightarrow ad = bc$$

3/4 = x/20 → **x = 15**

3 × 20 = 4x, so 60 = 4x.

x/5 = 12/15 → **x = 4**

15x = 60.

2 kg costs £3, 7 kg? → **£10.50**

3/2 = x/7 → 2x = 21.

Scale 1 : 50, model 6 cm → **300 cm real**

Scale factors are just proportions.

THE COMMON MISTAKE

× 3/4 = x/20 → x = 3 × 4 × 20

✓ 3/4 = x/20 → 4x = 60 → x = 15

Cross multiply gives an equation to solve, not the answer itself.

Label both fractions with units. If the units are not in matching positions, the setup is wrong.