Percentages: flowchart

Planner weeks 2 and 7 · Original, new or both? Follow the arrows to find out

A percentage change

Which amount have you been given?
before the change, after it, or both?

Before → ORIGINAL given

A TV costs £500. The price is reduced by 20%. Find the sale price.

1. Multiplier: 1 − 0.2 = 0.8
2. 0.8 × £500 = **£400**
3. Increase? 1 + the %: a 3% rise on £1500 is 1.03 × 1500 = £1545

✓ Non-calc: 10% = £50, so 20% = £100

After → NEW amount given

Prices are reduced by 30%. A jacket now costs £280. Find the normal price.

1. Which %? 100% − 30% = 70%
2. 70% = £280, so 10% = £280 ÷ 7 = £40
3. 100% = £40 × 10 = **£400**

✓ 70% of £400 = £280

Both → BOTH given

A shop buys a lamp for £80 and sells it for £56. Find the percentage loss.

1. Change: £80 − £56 = £24
2. Divide by the original: 24 ÷ 80 = 0.3
3. × 100 = **30% loss**

✓ 30% of £80 = £24

Does it change every year?
interest or depreciation

No → **Answer the question**
new price or the change?

Yes

Compound: amount × multiplier^{years} · a car worth £12 000 loses 15% a year: 12 000 × 0.85^3 = **£7369.50**
Simple: the same every year · 2.5% of £600 = £15, × 5 years = **£75**

The big question

Is the amount from **before** the change, **after** it, or do I have **both**?

"after", "now", "including VAT" → it is the new amount.

Finding a percentage

Non-calc: 10% = ÷ 10, 5% = half of 10%
15% of 80 = 8 + 4 = 12
Calc: 37% of £260 = 0.37 × 260 = £96.20

Watch out

- Reverse: finding the % of the new price (30% of £280) is wrong.
- % change: divide by the **original**, not the new.
- Money: 2 decimal places.