

Percentages in your head – ten per cent, VAT and the common traps

Upcoming episode

Percentages are the arithmetic people use most and get wrong most. A walk-through of the techniques – ten per cent as the starting point, the trick of turning the sum around, VAT in both directions, per cent against percentage points, and why up and down by the same amount does not return you to the start.

MAIN TOPICS

- Ten per cent, and how everything else is built from it
- Percentages can be turned around – the most useful trick
- Discounts – work out what you pay, not what you save
- Value added tax, and trap number one
- Per cent and percentage points
- Up and down by the same amount does not return you to the start
- Growth factors, and what happens when percentages are chained
- The rule of 72 for doubling time
- Working backwards

QUESTIONS THIS EPISODE ANSWERS

- How do you work out percentages in your head?
- Why is ten per cent the starting point for everything?
- Is 8 per cent of 50 the same as 50 per cent of 8?
- What is the fastest way to work out a discount?
- How do you find the price before VAT?
- What is the difference between per cent and percentage points?
- Why do you not end up back where you started when something rises and falls by the same percentage?
- What is a growth factor?
- What is the rule of 72, and how accurate is it?
- How do you work backwards from a percentage?

KEY POINTS

- Find ten per cent by moving the decimal point, and build everything else from there.
- Percentages can be turned around: 8 per cent of 50 is the same as 50 per cent of 8, which is 4.
- For a discount it is quicker to work out what you pay than what you save.
- To remove 25 per cent VAT you multiply by 0.8 – you do not subtract 25 per cent.
- In a price carrying 25 per cent VAT, the tax is 20 per cent of the total – one fifth.

- From 4 to 6 per cent is 2 percentage points, but a rise of 50 per cent.
- Up 25 per cent and down 25 per cent leaves you at 93.75 – not 100.
- A growth factor is multiplied. Ten per cent twice is 21 per cent, not 20.
- The rule of 72 estimates doubling time, and holds well for rates between 3 and 12 per cent.

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