

Percentage Change

KS3 Maths · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Increase £150 by 12% using the multiplier method.

Step 1 · Convert the percentage to a multiplier

$$100\% + 12\% = 112\% = 1.12$$

Step 2 · Multiply the original value

$$£150 \times 1.12 = £168$$

Answer: £168

Check: $£168 - £150 = £18$, and £18 is 12% of £150 ✓

2. Now try one with the steps

A coat is reduced to £56 after a 30% discount. Find the original price.

Step 1 · Identify what percentage remains

Step 2 · Set up the equation

Step 3 · Divide to find the original

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Increase £80 by 25%. [2]

2. Decrease £60 by 15%. [2]

3. A shirt originally costs £40 and is now £30. Find the percentage decrease. [3]

4. A house price rises from £180,000 to £207,000. Find the percentage increase. [3]

5. A laptop's price after a 20% discount is £400. Find the original price. [3]

6. A population of 5,000 grows by 8% each year for 2 years. Find the population after 2 years. [3]

7. Write down the multiplier for a 7% increase. [1]

8. Write down the multiplier for a 35% decrease. [1]

9. Increase £250 by 4%. [2]

10. Decrease 80 kg by 12.5%. [2]

11. A bike's price falls from £320 to £272. Find the percentage decrease. [2]

12. A sunflower grows from 40 cm to 58 cm. Find the percentage increase. [2]

13. A club's membership falls from 250 to 215. Find the percentage decrease. [2]

14. After a 15% pay rise, Mo earns £460 a week. What did he earn before the rise? [3]

15. A price is increased by 20% and then the new price is decreased by 20%. What is the overall percentage change? [3]

16. A car worth £12,000 loses 10% of its value each year. What is it worth after 2 years? [3]

4. Before you hand it in

Finding the original price after a 20% discount by adding 20% to the discounted price

If the price after a 20% discount is £400, that £400 represents 80% of the original — NOT 100%. Divide £400 by 0.8 to get £500, don't multiply by 1.2.

Calculating percentage change as $(\text{change} \div \text{new value}) \times 100$

Percentage change is always $(\text{change} \div \text{ORIGINAL value}) \times 100$ — not the new value. Using the new value gives a different, incorrect answer.

Writing the multiplier for a 5% increase as 1.5

5% = 0.05, so a 5% increase is $1 + 0.05 = 1.05$. A multiplier of 1.5 would be a 50% increase.