

YEAR 8 HIGHER

TOPIC 6~ Fractions, decimals and percentages

What do I need to know:

1. Recognise fractional equivalents to important recurring decimals and change a reoccurring decimal into a fraction
2. Calculate a percentage of a quantity
3. Calculate percentage increases and decreases and work out an original quantity before a percentage increase or decrease
4. Calculate percentage change and the effect of repeated percentage changes.

PERCENTAGE OF AN AMOUNT

Divide by 100 and multiply by percentage

Find 3% of £660

$$£660 \div 100 = 6.6 \times 3 = £19.80$$

PERCENTAGE CHANGE

Emma bought a house for £201,500. She sells the house for £213,590. Calculate the percentage profit

$$\frac{\text{Change}}{\text{Original}} \times 100 =$$

$$213590 - 201500 = 12090$$

$$12090 \div 201500 = 0.06 \times 100 = 6\%$$

$$X = 0.77..$$

$$10x = 7.77$$

$$9x = 7.00$$

$$X = \frac{7}{9}$$

$$0.3333... \frac{1}{3}$$

$$0.6666... \frac{2}{3}$$

$$0.1666... \frac{1}{6}$$

$$0.8333... \frac{5}{6}$$

$$0.1111... \frac{1}{9}$$

$$0.2222... \frac{2}{9}$$

$$0.4444... \frac{4}{9}$$

$$0.5555... \frac{5}{9}$$

$$0.7777... \frac{7}{9}$$

$$0.8888... \frac{8}{9}$$

$$0.0909... \frac{1}{11}$$

$$0.1818... \frac{2}{11}$$

$$0.08333... \frac{1}{12}$$

$$0.41666... \frac{5}{12}$$

PERCENTAGE INCREASE / DECREASE

Find the percentage and add /subtract it from the original amount (non-calculator)

Increase 500 by 20% :

$$10\% \text{ of } 500 = 50$$

$$\text{so } 20\% \text{ of } 500 = 100$$

$$500 + 100 = 600$$

Find the percentage multiplier and multiply.(calculator)

Decrease 800 by 17% :

$$100\% - 17\% = 83\%$$

$$83\% \div 100 = 0.83$$

$$0.83 \times 800 = 664$$

ORIGINAL QUANTITY BEFORE A PERCENTAGE CHANGE

Find the correct percentage given in the question, then work backwards to find 100%

A jumper was priced at £48.60 after a 10% reduction. Find its original price.

$$100\% - 10\% = 90\%$$

$$90\% = £48.60$$

$$1\% = £0.54$$

$$100\% = £54.00$$

REPEATED PERCENTAGE CHANGE

I invest £1000 for 4 years at an interest rate of 5%

$$1000 \times 1.05^4 = £1215.51$$