Fraction, decimal, percentage equivalence

Fraction	Decimal	Percentage
$^1/_2$	0.5	50%
$^1/_5$	0.2	20%
$^3/_{100}$	0.03	3%
$^3/_4$	0.75	75%

What careers would use these skills?

Medicine for drugs calculations, cooking for measuring fractions of an ingredient, farming for percentage yield of a crop, scientists looking at rates of decay.

Percentage increase

Calculate the percentage and add it on to the original

OR use a decimal multiplier:

$\dfrac{100 + \%}{100}$

Eg. Increase £200 by 5%

= 200 x 1.05 = £210

Percentage decrease

Calculate the percentage and subtract it from the original

OR use a decimal multiplier:

$\dfrac{100 - \%}{100}$

Eg. Decrease £200 by 5%

= 200 x 0.95 = £190

Percentages without a calculator

-Percentage means out of 100.

-To find 1%, divide by 100.

-To find 10%, divide by 10.

-To find 50%, divide by 2.

Use combinations of these percentages to calculate any other percentage.

Eg. Find 13% of 400

10% = 40

1% = 4

3% = 12

13% of 400 = 52

Percentages with a calculator (using decimal multipliers)

These are used to find a percentage of an amount, a percentage increase and a percentage decrease.

To find a percentage of an amount, convert the percentage to a decimal and multiply it by the amount.

To find a percentage increase $\dfrac{100 + \% \text{ increase}}{100}$

then multiply it by the amount

To find a percentage decrease $\dfrac{100 - \% \text{ decrease}}{100}$

then multiply it by the amount

Repeated percentage change

Compound interest = Interest paid on the original amount and the accumulated interest

Example A bank pays 5% compound interest a year. Bob invests £3000. How much will he have after 7 years.

3000 x 1.05^7 = £4221.30

Reverse percentages

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

Look out for words like 'before' or 'original'

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

100% - 10% = 90%

90% = £48.60

1% = £0.54

Recurring decimals

Decimals where one digit or a group of digits are repeated.

$0.777\ldots\ldots = 0.\dot{7}$

$0.803803\ldots = 0.\dot{8}0\dot{3}$