

Maths Knowledge Organiser

Year 7 Decimals and measure



Ordering decimals

Ensure you use zero place holders

0.5 0.05 0.005

0.500 0.050 0.005

In order → 0.005, 0.05, 0.5

Multiplying and dividing by 10, 100, 1000...

Move each place value right/left depending on how many zeros there are.

$$3.04 \times 1000 = 3040$$

			3	.	0	4
3	0	4	0	.	0	0

$$457 \div 100 = 4.57$$

4	5	7	.			
		4	.	5	7	

Dividing decimals

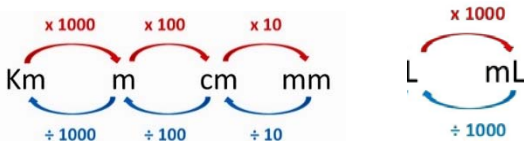
Ensure you are dividing by a whole number and use the bus stop method

$3.8 \div 0.8 \rightarrow \times$ both number by 10 $\rightarrow 38 \div 8$

$$\begin{array}{r} 04.75 \\ 8 \overline{) 38.60} \\ \underline{32} \\ 60 \\ \underline{56} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

Converting units

Select the correct conversion factor then either multiply or divide.



Percentage multipliers

Calculate the percentage and divide by 100

To find 45% → 1.45

To increase by 9% → $100+9 = 109 \rightarrow 1.09$

To decrease by 14.5% → $100-14.5 = 85.5 \rightarrow 0.855$

Reverse percentages

We divide by the multiplier.

An object has increased in size by 7% to 53.5kg

$$53.5 \div 1.07 = 50\text{kg}$$

Rounding

0-4 round down

5-9 round up

Rounding

452 to nearest 10 = 450

37564 to nearest 100 = 37600

4.893 to nearest whole = 5

Adding/subtract decimals

Line up the decimal $56.9 + 3.88 = 60.78$

$$\begin{array}{r} 56.90 \\ + 3.88 \\ \hline 60.78 \end{array}$$

Same with subtraction $65 - 3.2 = 61.8$

$$\begin{array}{r} 64.50 \\ - 3.20 \\ \hline 61.30 \end{array}$$

Multiplying decimals

Ignore decimal then return it into answer

$3.2 \times 4.12 \rightarrow 32 \times 412 = 13184$

$3.2 \times 4.12 = 13.184$

Fraction, decimals and percentages

$$32\% \rightarrow \frac{32}{100} \rightarrow \frac{8}{25}$$

$$\frac{5}{8} \rightarrow 5 \div 8 \rightarrow \begin{array}{r} 0.625 \\ 8 \overline{) 5.000} \\ \underline{4} \\ 10 \\ \underline{8} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array} \rightarrow 0.625$$

$$32\% \rightarrow 32 \div 100 = 0.32$$

$$0.6 \rightarrow 0.6 \times 100 = 60\%$$

Recognising terminating and recurring decimals

If the denominator is written as a product of prime factors and only includes 2s and 5s, its terminating.