Lesson 1 - Short Division

Starter

1) 2.4 x 3

2) $\frac{2}{3} \times \frac{3}{5}$

3) $1\frac{1}{2} + 3\frac{2}{3}$

4) Expand $2x(3x - 5)$

Starter Answers

1) 7.2 2) $\frac{6}{15}$ 3) $\frac{31}{6}$ 4) $6x^2 - 10x$

We can use short division (**bus stop** division) to divide by whole numbers (**integers**).

Example 1

Work out 272 ÷ 8

Use bus stop division:

$$8\overline{)272}$$

How many 8's fit into 2?
Write the number of 8's at the top and carry over the remainder

$$\begin{array}{r} 0 \\ 8\overline{)2^{2}72} \end{array}$$

How many 8's fit into 27?
Write this above and carry over the remainder

$$\begin{array}{r} 03 \\ 8\overline{)2^{2}7^{3}2} \end{array}$$

How many 8's fit into 32?

$$\begin{array}{r} 032 \\ 8\overline{)2^{2}7^{3}2} \end{array}$$

The answer is 32

Example 2

Work out 351 ÷ 13

$$13\overline{)351}$$

How many 13's fit into 3?

$$\begin{array}{r} 0 \\ 13\overline{)3^{3}51} \end{array}$$

How many 13's fit into 35?

$$\begin{array}{r} 02 \\ 13\overline{)3^{3}5^{9}1} \end{array}$$

How many 13's fit into 91?

$$\begin{array}{r} 027 \\ 13\overline{)3^{3}5^{9}1} \end{array}$$

The answer is 27

We can also use this method to divide **decimals** by **integers**.

Example 3

Work out 2.52 ÷ 9

$$9\overline{)2.52}$$

How many 9's fit into 2?

$$\begin{array}{r} 0 \\ 9\overline{)2.^{2}52} \end{array}$$

How many 9's fit into 25?
Remember to put the decimal point at the top

$$\begin{array}{r} 0.2 \\ 9\overline{)2.^{2}5^{7}2} \end{array}$$

How many 9's fit into 72?

$$\begin{array}{r} 0.28 \\ 9\overline{)2.^{2}5^{7}2} \end{array}$$

The answer is 0.28

The next example shows what happens when we don't get an integer as the answer.

Example 4

Work out 5 ÷ 8

$$8\overline{)5}$$

How many 8's fit into 5?

$$\begin{array}{r} 0 \\ 8\overline{)5} \end{array}$$

We need to carry over 5 but there is nothing to carry it over to. So we put a decimal point in and add a 0

$$\begin{array}{r} 0. \\ 8\overline{)5.^{5}0} \end{array}$$

How many 8's fit into 50?

$$\begin{array}{r} 0.6 \\ 8\overline{)5.^{5}0^{2}0} \end{array}$$

How many 8's fit into 20?

$$\begin{array}{r} 0.62 \\ 8\overline{)5.^{5}0^{2}0^{4}0} \end{array}$$

How many 8's fit into 40?

$$\begin{array}{r} 0.625 \\ 8\overline{)5.^{5}0^{2}0^{4}0} \end{array}$$

The answer is 0.625