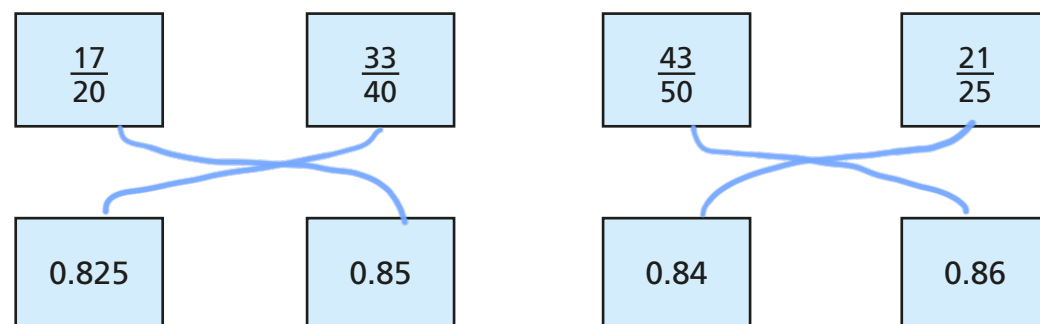


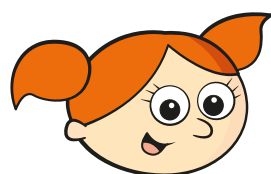
Convert fluently between fractions, decimals and percentages

1 Draw a line between the matching fractions and decimals.

You may use a calculator to help you.



2



One-quarter is equal to 25%,
so one-eighth must be the same
as $12\frac{1}{2}\%$ or 0.125

Use Alex's fact to write the percentage and decimal equivalents.

$$\frac{3}{8} = 3 \times 12\frac{1}{2}\% = \boxed{37.5}\% = \boxed{0.375}$$

$$\frac{5}{8} = \underline{5 \times 12\frac{1}{2}\%} = \boxed{62.5}\% = \boxed{0.625}$$

$$\frac{7}{8} = \times \underline{7 \times 12\frac{1}{2}\%} = \boxed{87.5}\% = \boxed{0.875}$$

3 Look at the results in the table.

Percentage	Calculation	Decimal
40%	$40 \div 100$	0.4
42%	$42 \div 100$	0.42
42.7%	$42.7 \div 100$	0.427

Use a calculator or your knowledge of division and multiplication to complete this table.

Percentage	Decimal
37%	0.37
37.4%	0.374
3%	0.03
3.5%	0.035
46%	0.46
41.6%	0.416
40.6%	0.406
4.6%	0.046

4 You can convert a fraction to a decimal by dividing the numerator by the denominator.

For example, $\frac{11}{20} = 11 \div 20 = 0.55$

Convert these fractions to decimals.

a) $\frac{19}{40} = \boxed{0.475}$

b) $\frac{27}{200} = \boxed{0.135}$

c) $\frac{51}{80} = \boxed{0.6375}$

5

Convert these percentages to fractions, simplifying your answers if possible.

The first one has been done for you.

$$\text{a) } 30\% = \frac{30}{100} = \frac{3}{10}$$

$$\text{d) } 42\% = \frac{21}{50}$$

$$\text{b) } 45\% = \frac{9}{20}$$

$$\text{e) } 71\% = \frac{71}{100}$$

$$\text{c) } 38\% = \frac{19}{50}$$

$$\text{f) } 92\% = \frac{23}{25}$$

6

Use a calculator to convert these fractions to decimals.

a) Copy the full display from your calculator screen.

$$\frac{1}{7} = 0.142857...$$

$$\frac{2}{7} = 0.285714...$$

$$\frac{3}{7} = 0.428571...$$

$$\frac{4}{7} = 0.571428...$$

$$\frac{5}{7} = 0.714285...$$

$$\frac{6}{7} = 0.857142...$$

$$\frac{7}{7} = 1$$

b) Some of the decimals in part a) are known as recurring decimals.

Which ones do you think are called this? Why?

They go on forever.

c) Work with a partner to find more fractions that are recurring decimals.

7

Write the next three terms in each sequence.

Give your answers as fractions, decimals and percentages.

a) $0.1, \frac{1}{5}, 30\%$, __, __, __

fractions: $\frac{4}{10}, \frac{5}{10}, \frac{6}{10}$

decimals: $0.4, 0.5, 0.6$

percentages: $40\%, 50\%, 60\%$

b) $\frac{1}{5}, 0.25, 30\%$, __, __, __

fractions: $\frac{35}{100}, \frac{4}{10}, \frac{45}{100}$

decimals: $0.35, 0.4, 0.45$

percentages: $35\%, 40\%, 45\%$