Fractions, Decimals & Percentages

Question 1

Convert to a decimal:

a) $\frac{1}{2}$ b) $\frac{1}{4}$ c) $\frac{1}{5}$ d) $\frac{1}{10}$

e) $\frac{1}{8}$ f) $\frac{3}{4}$ g) $\frac{1}{3}$

Question 2

Convert to a percentage:

a) $\frac{1}{2}$ b) $\frac{1}{10}$ c) $\frac{2}{5}$ d) $\frac{3}{10}$

e) $\frac{1}{50}$ f) $\frac{3}{20}$ g) $\frac{5}{8}$ h) $\frac{2}{3}$

Question 3

Convert to a fraction in its simplest form:

a) 0.5 b) 35% c) 0.72 d) 0.9

e) 200% f) 1.8 g) 0.3%

Question 4

Complete the table giving each fraction in its simplest form.

Fraction	Decimal	Percentage
$\frac{4}{5}$		
	0.119	
		64.2
	0.01	
$\frac{1}{9}$		
		119
$\frac{1}{7}$		

Extension

Which do you think is greater?

$$0.\dot{9} \quad or \quad 1$$

Investigation

Any fraction with 2 as its denominator terminates:

$$\frac{1}{2} = 0.5 \ , \ \frac{2}{2} = 1 \ , \ \frac{3}{2} = 1.5 \ , \ldots$$

Any fraction with 3 as its denominator recurs:

$$\frac{1}{3} = 0.333 \ldots \ , \ \frac{2}{3} = 0.666 \ldots \ , \ \frac{3}{3} = 0.999 \ldots \ , \ldots$$

Can you predict which other fractions terminate and which recur?

Answers

Question 1

Convert to a decimal:

b) $\frac{1}{2}$ = 0.5 b) $\frac{1}{4}$ = 0.25 c) $\frac{1}{5}$ = 0.2 d) $\frac{1}{10}$ = 0.1

e) $\frac{1}{8}$ = 0.125 f) $\frac{3}{4}$ = 0.75 g) $\frac{1}{3}$ = 0.3333…..

Question 2

Convert to a percentage:

b) $\frac{1}{2}$ = 50% b) $\frac{1}{10}$ = 10% c) $\frac{2}{5}$ = 40% d) $\frac{3}{10}$ = 30%

e) $\frac{1}{50}$ = 2% f) $\frac{3}{20}$ = 15% g) $\frac{5}{8}$ = 62.5% h) $\frac{2}{3}$ = 66.6666…%

Question 3

Convert to a fraction in its simplest form:

a) 0.5 = $\frac{1}{2}$ b) 35% = $\frac{7}{20}$ c) 0.72 = $\frac{18}{25}$ d) 0.9 = $\frac{9}{10}$

e) 200% = $\frac{2}{1}$ f) 1.8 = $\frac{9}{5}$ g) 0.3% = $\frac{3}{1000}$

Question 4

Complete the table giving each fraction in its simplest form.

Fraction	Decimal	Percentage
$\frac{4}{5}$	0.8	80%
$\frac{119}{1000}$	0.119	11.9%
$\frac{642}{1000}$	0.642	64.2
$\frac{1}{100}$	0.01	1%
$\frac{1}{9}$	0.111…	11,111…%
$\frac{119}{100}$	1.19	119
$\frac{1}{7}$	0.142857..	14.2857..%

Extension

Which do you think is greater?

$$0.\dot{9} \quad or \quad 1$$

They are the same.

Investigation

Any fraction with 2 as its denominator terminates:

$$\frac{1}{2} = 0.5 \quad , \quad \frac{2}{2} = 1 \quad , \quad \frac{3}{2} = 1.5 \quad , \ldots$$

Any fraction with 3 as its denominator recurs:

$$\frac{1}{3} = 0.333 \ldots \quad , \quad \frac{2}{3} = 0.666 \ldots \quad , \quad \frac{3}{3} = 0.999 \ldots \quad , \ldots$$

Can you predict which other fractions terminate and which recur?