Comparing Fractions, Decimals & Percentages Level 2

Name:

Date:

How to Guide

Skills Check

Rate how confident you feel about the skills tested in this section:

Skill	Not a clue!	I know a little	I feel okay with this	I feel quite confident	I feel very confident
Turn fractions into decimals					
Turn decimals into fractions					
Turn decimals into percentages					
Turn percentages into decimals					
Turn percentages into fractions					

When you have finished the booklet, use a different colour to mark your confidence levels again.

Comparing Fractions, Decimals & Percentages

Introduction

Before you start this booklet, you should be confident in working with fractions, decimals and percentages separately and you should know your place value. This booklet is a good opportunity to practise some of your mental maths so you may wish to try many of the questions without a calculator.

It can be difficult to compare fractions, decimals and percentages so we often convert them all to one type to make it easier to compare. Often you can choose which one you use.

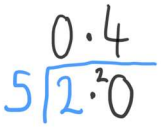
Turning Fractions into Decimals

Method

- Complete the division of the fraction.
- If you are using the bus stop method, remember to put the top number inside and the bottom number outside.
- With a proper fraction, the answer will be less than 1 so 0.
- You may wish to simplify the fraction first to make the division easier.

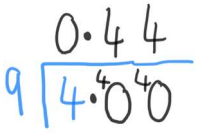
Example

What is $\frac{2}{5}$ as a decimal? 0.4



Example

What is $\frac{4}{9}$ as a decimal? 0.44 to 2 decimal places



Try It Out

Question 1

a) What is $\frac{3}{8}$ as a decimal?

b) What is $\frac{1}{3}$ as a decimal? *Round your answer to 2 d.p.*

c) What is $\frac{4}{7}$ as a decimal? *Round your answer to 2 d.p.*

If you have a calculator, just type in the division i.e. $\frac{2}{5}$ would be $2 \div 5 = 0.4$

Turning Decimals into Fractions

Method

- Identify the place value of the last digit in your number
- The bottom of the fraction is this place value
- Remove the 0. from the front of the number and write the rest on the top of a fraction
- Simplify the fraction

Example

What is 0.25 as a fraction?

The 5 is in the hundredths' position $\frac{?}{100}$

Removing the 0. and writing the rest on top gives $\frac{25}{100}$

Remember to simplify

$$\frac{25 \div 5}{100 \div 5} = \frac{5}{20} \rightarrow \frac{5 \div 5}{20 \div 5} = \frac{1}{4}$$

Or you could divide by 25 at the start to speed up the process

Try It Out

Question 2

a) What is 0.65 as a fraction in its simplest form?

b) What is 0.120 as a fraction in its simplest form?

c) What is 0.6 as a fraction in its simplest form?

Converting Decimals & Percentages

Method

- Multiply your decimal by 100 to turn it into a percentage as percentages are measured out of 100%
- The quick way to do this is to move the decimal point two positions to the right
- To convert from a percentage to a decimal, divide by 100
- The quick method is to move the decimal point two positions to the left

Example

What is 0.35 as a percentage?

0.35 x 100 = 35%

Example

What is 0.215 as a percentage?

0.215 x 100 = 21.5%

Example

What is 55% as a decimal?

55 ÷ 100 = 0.55

Try It Out

Question 3

a) What is 0.65 as a percentage?

b) What is 0.3 as a percentage?

c) What is 0.02 as a percentage?

d) What is 42% as a decimal?

e) What is 4% as a decimal?

f) what is 125% as a decimal?

Be careful with zeros

0.1 as a percentage is 10% not 1%

0.01 would be 1%

Converting Fractions & Percentages

Method 1

Convert each to a decimal first and then follow your method to convert from decimals into either fractions or percentages.

Example

What is $\frac{3}{5}$ as a percentage?

$3 \div 5 = 0.6$

0.6 x 100 = **60%**

Method 2

Multiply or divide your fraction until the denominator is 100. Your numerator will then be your percentage.

Example

What is $\frac{1}{20}$ as a percentage?

$$\frac{1 \times 5}{20 \times 5} = \frac{5}{100}$$

5%

Method 3

Write your percentage on the top of a fraction with 100 on the bottom and then simplify.

Example

What is 30% as a fraction? $\frac{30}{100}$

$$\frac{30 \div 5}{100 \div 5} = \frac{6}{20} \rightarrow \frac{6 \div 2}{20 \div 2} = \mathbf{\frac{3}{10}}$$

Try It Out

Question 4

a) What is $\frac{7}{8}$ as a percentage?

b) What is 4% as a fraction?

c) What is $\frac{1}{2}$ as a percentage?

d) What is 15% as a fraction?

Common Equivalencies

It's a good idea to learn the most common equivalencies between fractions, decimals and percentages as this will mean less work converting between them all.

Try it Out

The table on the right shows all the main equivalencies. You can practise by covering it up and filling in the gaps in the tables below.

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{1}{5}$	0.2	20%
$\frac{2}{5}$	0.4	40%
$\frac{1}{10}$	0.1	10%
$\frac{1}{100}$	0.01	1%
$\frac{1}{8}$	0.125	12.5%

Fraction	Decimal	Percentage
	0.5	
$\frac{1}{4}$		
		75%
$\frac{1}{5}$		
	0.4	
		10%
	0.01	
$\frac{1}{8}$		

Fraction	Decimal	Percentage
		50%
	0.25	
$\frac{3}{4}$		
		20%
$\frac{2}{5}$		
	0.1	
$\frac{1}{100}$		
	0.125	

Mixed Questions

Always simplify fractions. Round to 2 d.p. where necessary.

a) What is $\frac{4}{5}$ as a percentage?

b) What is 0.07 as a fraction?

c) What is 0.52 as a percentage?

d) What is 27% as a decimal?

e) What is 0.8 as a fraction?

f) What is $\frac{3}{8}$ as a decimal?

g) What is 70% as a fraction?

h) What is 0.09 as a percentage?