Lesson 11 – Converting Fractions, Decimals and Percentages

Starter

1) Convert to fractions

a) 0.03 b) 0.46 c) 0.004 d) 0.506

2) Convert to decimals

a) $\frac{7}{10}$ b) $\frac{10}{25}$ c) $\frac{3}{500}$ d) $2\frac{34}{50}$

Starter Answers

1)a) $\frac{3}{100}$ b) $\frac{23}{50}$ c) $\frac{1}{250}$ d) $\frac{253}{500}$

2)a) 0.7 b) 0.4 c) 0.006 d) 2.68

Fractions and Percentages

Percentages tell you what proportion of 100 a number is. If you have 60%, this means it is 60 out of 100 or $\frac{60}{100}$.

So, we can convert fractions to percentages by writing them over 100.

Example 1

Change to percentages

1) $\frac{4}{5}$

$\frac{4}{5} = \frac{8}{10} = \frac{80}{100}$

This is 80 out of 100, which is 80%

2) $\frac{13}{25}$

$\frac{13}{25} = \frac{52}{100}$

This is 52 out of 100, which is 52%

3) $2\frac{3}{4}$

$2\frac{3}{4} = \frac{11}{4} = \frac{275}{100}$

This is 275 out of 100, which is 275%

Example 2

Change to fractions and simplify your answers

1) 40%

40 percent means 40 out of 100

This is $\frac{40}{100}$ which simplifies to $\frac{2}{5}$

2) 2%

2 percent means 2 out of 100

This is $\frac{2}{100}$ which simplifies to $\frac{1}{50}$

3) 3.5%

This means 3.5 out of 100

This is $\frac{3.5}{100} = \frac{7}{200}$

Your go

1) Change to fractions and simplify your answer

a) 30% b) 45% c) 8% d) 2.8%

2) Change to percentages

a) $\frac{9}{10}$ b) $\frac{17}{25}$ c) $\frac{1}{50}$ d) $\frac{3}{8}$

Answers

1)a) $\frac{3}{10}$ b) $\frac{9}{20}$ c) $\frac{2}{25}$ d) $\frac{2.8}{100} = \frac{28}{1000} = \frac{14}{500} = \frac{7}{250}$

2)a) 90% b) 68% c) 2% d) 37.5%

Percentages and Decimals

Since percentages are numbers out of 100, we could write 30% as $\frac{30}{100}$.

Another way to write $\frac{30}{100}$ is 30 ÷ 100.

So, to change a percentage to a decimal we can just divide the number by 100.

Example 3

Change to decimals

1) 65%

65% is the same as $\frac{65}{100}$

$\frac{65}{100}$ is the same as 65 ÷ 100

So 65% is 0.65

2) 3%

3% is the same as $\frac{3}{100}$

This is the same as 3 ÷ 100

So 3% is 0.03

3) 2.4%

2.4% is the same as $\frac{2.4}{100}$

This is the same as 2.4 ÷ 100

So 2.4% is 0.024

Example 4

Change to percentages

1) 0.6

0.6 means we have 6 tenths. This can be written as $\frac{6}{10}$

Now change so that it is over 100: $\frac{6}{10} = \frac{60}{100}$

This is 60%

2) 0.46

0.46 means we have 46 hundredths

This can be written as $\frac{46}{100}$

This is 46%

3) 0.008

0.008 means we have 8 thousandths

This can be written as $\frac{8}{1000}$

Now change it so it is over 100: $\frac{8}{1000} = \frac{0.8}{100}$

This is 0.8%

Your go

1) Change to decimals

a) 92% b) 6% c) 40% d) 5.6%

2) Change to percentages

a) 0.8 b) 0.64 c) 0.002 d) 0.125

Answers

1)a) 0.92 b) 0.06 c) 0.4 d) 0.056

2)a) 80% b) 64% c) 0.2% d) 12.5%