

PERCENTAGES

%

P E R C E N T A G E S I

Lesson 1

Percentages : Year 9

Non Calculator

1.1 Memory percentages

To this table of common fractions add the percentage equivalents.

$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{10}$	$\frac{1}{20}$	$\frac{1}{25}$	$\frac{1}{50}$	$\frac{1}{100}$

Once you know this table you can convert many other, apparently more awkward, fractions into percentages.

1.2 Examples

Example 1

Convert the following common fractions[†] into percentages;

(i)

$$\frac{3}{5}$$

(ii)

$$\frac{3}{20}$$

(iii)

$$\frac{1}{8}$$

(iv)

$$\frac{1}{200}$$

(v)

$$\frac{7}{5}$$

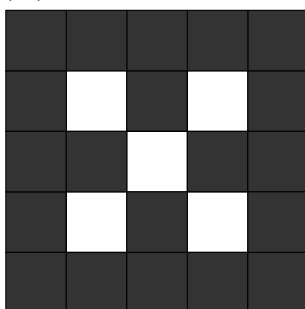
(vi)

$$\frac{17}{10}$$

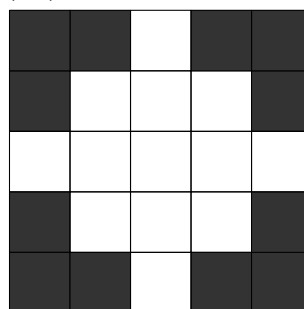
Example 2

What percentage of the grid is shaded ?

(i)



(ii)



[†] Fractions like $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ are often called **common** fractions or **vulgar** fractions as opposed to **decimal** fractions, 0.25, 0.5, 0.75. The word fraction on its own can mean either.

1.3 Exercise

Question 1

Convert the following common fractions into percentages;

(i)

$$\frac{2}{5}$$

(ii)

$$\frac{7}{20}$$

(iii)

$$\frac{3}{4}$$

(iv)

$$\frac{3}{20}$$

(v)

$$\frac{7}{25}$$

(vi)

$$\frac{2}{3}$$

(vii)

$$\frac{13}{50}$$

(viii)

$$\frac{4}{5}$$

(ix)

$$\frac{12}{25}$$

(x)

$$\frac{11}{20}$$

(xi)

$$\frac{3}{100}$$

(xii)

$$\frac{3}{50}$$

(xiii)

$$\frac{8}{5}$$

(xiv)

$$\frac{13}{10}$$

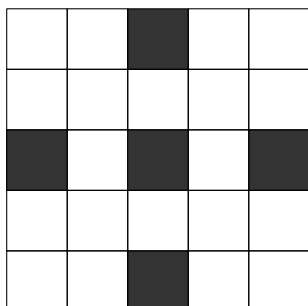
(xv)

$$\frac{5}{4}$$

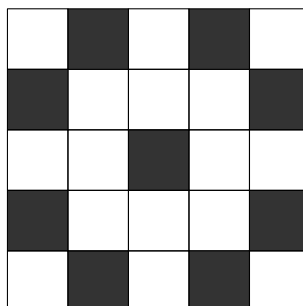
Question 2

What percentage of the grid is shaded ?

(i)



(ii)



Question 3

Convert the following percentages into common fractions;

(i) 10% (ii) 15% (iii) 50%

(iv) 20% (v) $66\frac{2}{3}\%$ (vi) 8%

(vii) 70% (viii) 3% (ix) 12%

(x) 28% (xi) 45% (xii) 95%

(xiii) 80% (xiv) 32% (xv) 96%

Question 4

(i) Shade in 40%

(ii) Shade in 50%

1.4 Homework Exercise

Table of common fractions with percentge equivalents

$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{10}$	$\frac{1}{20}$	$\frac{1}{25}$	$\frac{1}{50}$	$\frac{1}{100}$
50%	$33\frac{1}{3}\%$	25%	20%	10%	5%	4%	2%	1%

Question 1

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 $\circ$ $\circ$
 $\%$
 #Purrcentages < == >

In tests 7 out of every 10 cat owners said that their cat preferred *purrfecta* cat food. What percentage of cats is this ?

Question 2

A sign advertising a can of Lilt claims that it contains 20% extra free. As a vulgar fraction how much extra is this ? (Chose one answer)

- | | | | |
|----------|---------------|----------|---------------|
| A | $\frac{1}{5}$ | B | $\frac{1}{3}$ |
| C | $\frac{1}{4}$ | D | $\frac{1}{6}$ |

Question 3

A sign advertising a can of Fanta claims that it contains $\frac{2}{3}$ extra free. As a vulgar fraction how much extra is this ? (Chose one answer)

- | | | | |
|----------|-------------------|----------|-------|
| A | $33\frac{1}{3}\%$ | B | 12.5% |
| C | $66\frac{2}{3}\%$ | D | 75% |

Question 4

Write the following vulgar fractions as percentages;

- | | | | | | |
|--------|----------------|--------|------------------|---------|----------------|
| (i) | $\frac{2}{5}$ | (ii) | $\frac{3}{4}$ | (iii) | $\frac{2}{25}$ |
| (iv) | $\frac{3}{20}$ | (v) | $\frac{17}{100}$ | (vi) | $\frac{7}{50}$ |

Question 5

Write the following percentages in the form of common fractions;

- (i) 30% (ii) 60% (iii) 5%
- (iv) 10% (v) 99% (vi) 25%

Question 6

Rewrite each of the following test results as a percentage;

- (i) In a 10 mark test Leighton gets 7 questions correct.
- (ii) In a 20 mark test George gets 19 questions correct.
- (iii) In a 25 mark test Toby gets 23 questions correct.
- (iv) In a 20 mark test William gets 3 questions wrong.

Question 7

- (i) Write down the name of each month that starts with the letter J.
- (ii) What percentage of months start with the letter J ?

Question 8

Which is the odd one out ?

Give a reason for your answer.

Half price Buy one get one free 50% off