



Fractions, decimals and percentages

- Converting between fractions and decimals
- Describing amounts as percentages
- Representing a percentage on a diagram
- Changing between fractions, decimals and percentages

Keywords

You should know

explanation 1

1 Write these decimals as fractions.

- | | | | | |
|---------------|---------------|---------------|---------------|---------------|
| a 0.7 | b 0.13 | c 0.3 | d 0.49 | e 0.07 |
| f 0.33 | g 0.9 | h 0.01 | i 0.67 | j 0.99 |

2 Write these decimals as fractions in their lowest terms.

- | | | | |
|---------------|---------------|---------------|---------------|
| a 0.5 | b 0.25 | c 0.75 | d 0.8 |
| e 0.24 | f 0.35 | g 0.6 | h 0.55 |
| i 0.42 | j 0.08 | k 0.4 | l 0.64 |

explanation 2

3 a Copy and complete.

- | | | | |
|---|--|--|--|
| i $\frac{1}{5} = \frac{\square}{10}$ | ii $\frac{2}{5} = \frac{\square}{10}$ | iii $\frac{7}{20} = \frac{\square}{100}$ | iv $\frac{11}{25} = \frac{\square}{100}$ |
| v $\frac{9}{20} = \frac{\square}{100}$ | vi $\frac{3}{50} = \frac{\square}{100}$ | vii $\frac{49}{50} = \frac{\square}{100}$ | viii $\frac{18}{75} = \frac{\square}{25} = \frac{\square}{100}$ |

b Write each of the fractions in part **a** as a decimal.

4 Write each of these fractions as a decimal.

- | | | | |
|--------------------------|-------------------------|--------------------------|----------------------------|
| a $\frac{11}{20}$ | b $\frac{7}{25}$ | c $\frac{27}{50}$ | d $\frac{126}{200}$ |
|--------------------------|-------------------------|--------------------------|----------------------------|

5 Write the fractions as decimals. Decide which value is bigger and by how much.

- | | | |
|----------------------------|-----------------------------|------------------------------|
| a 0.7 $\frac{1}{2}$ | b $\frac{4}{5}$ 0.45 | c 0.33 $\frac{3}{10}$ |
|----------------------------|-----------------------------|------------------------------|

6 a Give your answers to these divisions as proper fractions. Write them in their lowest terms.

i $2 \div 5$

ii $9 \div 12$

iii $14 \div 20$

iv $18 \div 30$

v $24 \div 60$

vi $27 \div 90$

b Write each answer from part **a** as a decimal.

explanation 3

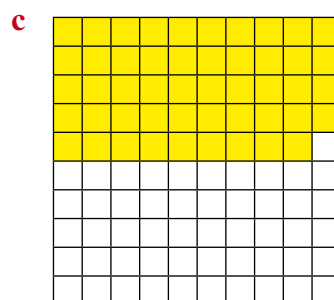
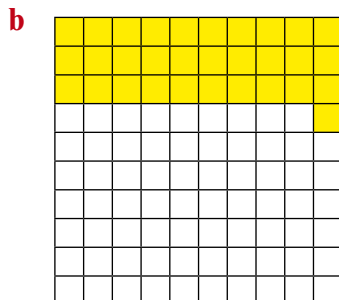
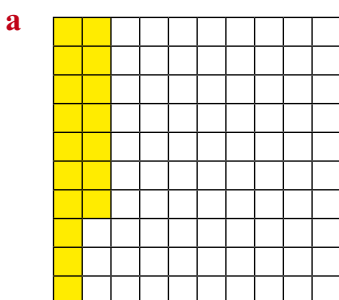
7 Some diagrams made from 100 squares are shown below. Answer these questions for each diagram.

i What fraction of the squares are yellow?

ii What percentage of the squares are yellow?

iii What fraction of the squares are not yellow?

iv What percentage of the squares are not yellow?



explanation 4a

explanation 4b

8 Copy and complete.

a $\frac{32}{100} = \square \%$

b $\frac{44}{100} = \square \%$

c $\frac{\square}{100} = 9 \%$

d $\frac{8}{10} = \frac{\square}{100} = \square \%$

e $\frac{7}{20} = \frac{\square}{100} = \square \%$

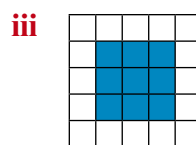
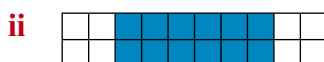
f $\frac{11}{25} = \frac{\square}{100} = \square \%$

g $\frac{19}{25} = \frac{\square}{100} = \square \%$

h $\frac{124}{100} = \frac{\square}{100} = \square \%$

i $\frac{24}{300} = \frac{\square}{100} = \square \%$

9 a What fraction of each diagram is blue?



b What percentage of each diagram is blue?

10 Use equivalent fractions to write each of these as a percentage.

a $\frac{1}{2}$

b $\frac{1}{4}$

c $\frac{1}{5}$

d $\frac{1}{10}$

e $\frac{3}{4}$

f $\frac{4}{5}$

g $\frac{7}{10}$

h $\frac{27}{50}$

i $\frac{7}{25}$

j $\frac{11}{20}$

k $\frac{150}{200}$

l $\frac{240}{400}$

11 Use equivalent fractions to simplify each of these and then write them as a percentage.

a $\frac{24}{30}$

b $\frac{28}{40}$

c $\frac{45}{60}$

d $\frac{30}{125}$

e $\frac{36}{60}$

f $\frac{32}{80}$

g $\frac{120}{150}$

h $\frac{36}{75}$

i $\frac{68}{200}$

12 Write each percentage as a fraction and simplify where possible.

a 60%

b 90%

c 84%

d 45%

e 32%

f 80%

g 8%

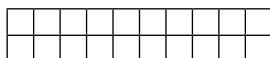
h 4%

i 16%

13 a Copy and complete this calculation.

$$35\% = \frac{\square}{100} = \frac{\square}{20}$$

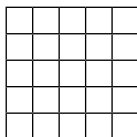
b Shade 35% of this grid.



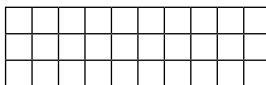
c Explain why 65% of the grid will be unshaded.

14 a Copy these diagrams and shade the percentage given.

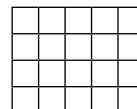
i 80%



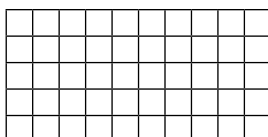
ii 40%



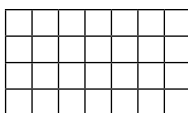
iii 15%



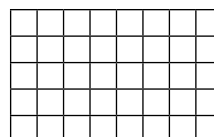
iv 24%



v 75%



vi 20%



b What percentage of each shape will be unshaded?

explanation 5

15 Write as decimals.

a $\frac{23}{100}$

b $\frac{9}{100}$

c 47%

d 6%

e 60%

f 25%

g 10%

h 1%

16 Write these decimals as percentages.

a 0.39

b 0.75

c 0.05

d 0.5

e 0.27

f 0.3

g 0.4

h 0.04

17 Copy and complete this table.

	Fraction	Decimal	Percentage
a		0.4	
b	$\frac{7}{20}$		
c		0.95	
d			6
e	$\frac{12}{25}$		
f			72
g	$\frac{11}{50}$		