

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

Number

Converting between fractions, decimals and percentages

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments

Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

Questions 1 to 36 are **foundation** tier only

For questions 1 to 18 you must **NOT** use a calculator.



Q1.

Write 0.19 as a fraction.

(Total 1 mark)

Q2.

What is $\frac{1}{20}$ as a decimal?
Circle your answer.

0.2

0.05

0.02

0.005

(Total 1 mark)

Q3.

Match each box on the left to the box on the right with the same value.
One has been done for you.

$\frac{1}{10}$

0.1

$\frac{1}{2}$

0.05

$\frac{1}{4}$

20%

$\frac{1}{5}$

$\frac{2}{6}$

0.25

$\frac{10}{20}$

(Total 3 marks)

Q4.

As a decimal $\frac{11}{40} = 0.275$

Work out $\frac{33}{400}$ as a decimal.

(Total 2 marks)

Q5.

Complete the table to show equivalent fractions and percentages.

Fraction	Percentage
$\frac{1}{2}$	50%
$\frac{3}{10}$	
	43%
$\frac{5}{2}$	

(Total 3 marks)

Q6.

Circle the decimal which has the same value as $\frac{3}{5}$

0.06

0.35

0.6

3.5

(Total 1 mark)

Q7.

Work out $\frac{1}{4} + 0.5$

Circle your answer.

0.30

0.6

0.75

0.9

(Total 1 mark)

Q8.

Complete the table.

Fraction	Decimal	Percentage
$\frac{1}{2}$		50%
$\frac{3}{4}$	0.75	
	0.10	10%

(Total 3 marks)

Q9.

(a) Three of these fractions are equivalent.

Circle the odd one out.

$\frac{2}{8}$

$\frac{3}{12}$

$\frac{4}{10}$

$\frac{5}{20}$

(1)

(b) Write $\frac{3}{4}$ as a percentage.

(1)

(c) Write 0.3 as a percentage.

(1)

(Total 3 marks)

Q10.

Circle the **three** values that are greater than $\frac{1}{2}$

0.32

65%

 $\frac{1}{4}$

0.76

 $\frac{2}{3}$

40%

(Total 3 marks)**Q11.**

In each part, circle the odd one out.
Give a reason for your answer.

(a) 75% $\frac{3}{4}$ 0.75 7.5

(1)

(b) $\frac{2}{6}$ $\frac{4}{10}$ $\frac{6}{18}$ $\frac{8}{24}$

(1)

(c) $\sqrt{64}$ $\sqrt{81}$ $\sqrt{125}$ $\sqrt{144}$

(1)

(d) 11 13 15 17

(1)**(Total 4 marks)****Q12.**

Circle the percentage that is closest in value to $\frac{1}{3}$

30%

33%

33.3%

33.4%

(Total 1 mark)**Q13.**

(a) Write 30% as a fraction.

(1)

(b) Write 80% as a decimal.

(1)

(c) Circle the **two** values that are equivalent to $\frac{2}{3}$

$\frac{66}{100}$ $0.\dot{6}$ 60% $\frac{66}{99}$ 0.6

(2)**(Total 4 marks)****Q14.**

(a) Write 0.85 as a fraction in its simplest form.

(2)

(b) Write $\frac{5}{8}$ as a decimal.

(1)**(Total 3 marks)****Q15.**

Which of $\frac{2}{5}$ or $\frac{5}{8}$ is closer in value to $\frac{1}{2}$?
You **must** show your working.

(Total 3 marks)

Q16.

- (a) Complete the table.

Fraction	Decimal	Percentage
$\frac{3}{4}$		75%
$\frac{9}{10}$	0.9	
	0.3	30%

(3)

- (b) Write $\frac{3}{4}$, 0.9 and 30% in order with the smallest first.

(1)

(Total 4 marks)

Q17.

- (a) (i) Write $\frac{1}{4}$ as a percentage.

(1)

- (ii) Write 30% as a decimal.

(1)

- (iii) Write $\frac{1}{4}$, 30% and 0.2 in order with the smallest first.

(1)

- (b) Complete the following.

(i) $\frac{2}{3} = \frac{\square}{18}$

(1)

(ii) $\frac{\square}{4} = \frac{15}{20}$

(1)

- (c) Work out $\frac{3}{8}$ as a decimal.

(2)

(Total 7 marks)

Q18.

- (a) What **percentage** of this shape is shaded?



(1)

- (b) Circle the **two** fractions that are equivalent to $\frac{4}{5}$

$\frac{2}{10}$

$\frac{6}{8}$

$\frac{8}{10}$

$\frac{20}{25}$

$\frac{8}{9}$

(2)

- (c) Work out 40% of 70

(2)

(Total 5 marks)

For questions 19 to 36 you may use a calculator.



Q19.

Complete the table.

Fraction	Decimal	Percentage
$\frac{1}{4}$	0.25	
$\frac{2}{5}$		40%
	0.9	90%

(Total 3 marks)

Q20.

Circle the decimal that is greater than $\frac{1}{5}$ and less than $\frac{1}{4}$

0.152 0.200 0.215 0.251

(Total 1 mark)

Q21.

Circle the decimal that has the same value as $\frac{4}{5}$

0.04 0.4 0.45 0.8

(Total 1 mark)

Q22.

What is $\frac{3}{2}$ as a decimal?

Circle your answer.

1.05 1.1 1.5 3.2

(Total 1 mark)

Q23.

Circle the fraction equal to 0.1%

$\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{1000}$ $\frac{1}{10000}$

(Total 1 mark)

Q24.

Circle the fraction which is equal to 0.25

$\frac{1}{40}$ $\frac{2}{5}$ $\frac{3}{12}$ $\frac{4}{100}$

(Total 1 mark)

Q25.

Circle the fraction equal to 0.12

$\frac{1}{12}$ $\frac{3}{25}$ $\frac{1}{8}$ $\frac{6}{5}$

(Total 1 mark)

Q26.

Circle the decimal that is greater than $\frac{3}{10}$ and less than $\frac{2}{5}$

0.32 0.035 0.4

0.24

(Total 1 mark)

Q27.

Write 0.27 as a fraction.

(Total 1 mark)

Q28.

(a) Convert $\frac{47}{8}$ to a mixed number.

(1)

(b) Convert $\frac{61}{128}$ to a decimal.
Give your answer to 2 decimal places.

(2)

(Total 3 marks)

Q29.

Circle the value of 0.15 as a fraction.

$\frac{1}{5}$

$\frac{1}{6}$

$\frac{3}{20}$

$\frac{3}{50}$

(Total 1 mark)

Q30.

(a) Write down the percentage that is equal to $\frac{3}{4}$

(1)

(b) Write down a fraction that is equal to 0.3

(1)

(Total 2 marks)

Q31.

Write $\frac{4}{5}$ as a decimal.

(Total 1 mark)

Q32.

Work out the number 10 times bigger than $\frac{7}{100}$
Give your answer as a decimal.

(Total 2 marks)

Q33.

Convert $\frac{7}{16}$ to a decimal.

(Total 1 mark)

Q34.

Write $\frac{2}{5}$ as a decimal.

(Total 1 mark)

Q35.

Work out $\frac{9}{4}$ as a decimal.

(Total 1 mark)

Q36.

Complete each statement using **one** of these symbols.

	<	=	>
2.54	_____	2.508	
0.25	_____	$\frac{1}{4}$	
2	_____	$\frac{5}{2}$	

(Total 3 marks)

Questions 37 to 45 are **higher** tier only

For questions 37 to 38 you must **NOT** use a calculator.



Q37.

$0.203 = \frac{1}{5} + x$
Circle the value of x .

$$\frac{1}{300}$$

$$\frac{1}{3000}$$

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

$$\frac{3}{1000}$$

(Total 1 mark)

Q38.

Circle the fraction that is equivalent to 4.625

$$\frac{39}{8}$$

$$\frac{37}{8}$$

$$\frac{185}{4}$$

$$\frac{17}{4}$$

(Total 1 mark)

For questions 39 to 45 you may use a calculator.



Q39.

Circle the fraction equivalent to 2.375

$$\frac{23}{75}$$

$$\frac{9}{4}$$

$$\frac{19}{8}$$

$$\frac{75}{23}$$

(Total 1 mark)

Q40.

Circle the decimal that is closest in value to $\frac{11}{20}$

0.56

0.6

0.525

0.5

(Total 1 mark)

Q41.

Circle the fraction that is equivalent to 3.875

$$\frac{15}{4}$$

$$\frac{29}{8}$$

$$\frac{31}{8}$$

$$\frac{15}{8}$$

(Total 1 mark)

Q42.

Circle the multiplier that reduces a quantity by 12.5%

0.125

0.875

12.5

87.5

(Total 1 mark)

Q43.

Circle the decimal that is closest in value to $\frac{39}{800}$

0.04

0.048

0.049

0.05

(Total 1 mark)

Q44.

Write down a fraction equivalent to 1.875

(Total 1 mark)

Q45.

Write down an improper fraction equivalent to 1.375

(Total 1 mark)