Fractions & Percentages Review

Question 1

Work out

$$\frac{3}{5} + \frac{2}{7}$$

…………………………

Question 2

Work out

$$1\frac{2}{3} + 2\frac{3}{4}$$

Give your answer as a mixed number in its simplest form.

………………………

(3 marks)

Question 3

Calculate

$$\frac{8}{9} - \frac{1}{4}$$

……………………………

Question 4

Work out

$$3\frac{2}{5} - 1\frac{3}{4}$$

……………………………

Question 5

Work out $\frac{4}{5}$ of 45

....

(2 marks)

Question 6

Calculate

$$\frac{4}{6} \times \frac{3}{5}$$

....

Question 7

Work out

$$2\frac{2}{3} \times 1\frac{3}{4}$$

....

(3 marks)

Question 8

Calculate $\frac{15}{44} \div \frac{5}{33}$.

Give your answer as a fraction in its simplest form.

....

Question 9

Calculate: $3\frac{1}{2} \div 1\frac{1}{3}$

giving your answer as mixed number in its simplest form.

....

Question 10

$\frac{9}{11}$ of a number is 54.

Work out the number.

....

Question 11

What is 0.35 as a fraction in its simplest form?

....

Question 12

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

[   ] 2.5%

[   ] 10%

[   ] 25%

[   ] 40%

Question 13

What is $\frac{17}{20}$ as a decimal?

....

Question 14

Write 45% as a fraction in its simplest form.

....

(2 marks)

Question 15

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

....

Question 16

Work out 15% of 160 grams.

.... grams

(2 marks)

Question 17

A shop, *Furniture 4U*, had a sale.

In the sale, normal prices were reduced by 15%.

The normal price of a table was $280.

Work out the sale price of the table.

$ ....

(3 marks)

Question 18

Tony is making a journey of 180 miles.
He stops after 36 miles.

What percentage of the journey has he completed?

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.... %

(2 marks)

Question 19

The cost of a CD player is £84 plus $17\frac{1}{2}\%$ tax.

What is the total cost of the CD player?

£ ....

Question 20

Work out the price of the car before it was reduced.

£ ....

(3 marks)

Question 21

Natasha took 40 minutes to come to school yesterday.

Today, Natasha took 65 minutes to come to school.

Find the percentage increase.

.... % increase

Question 22

The price of a coat is reduced by 15% in a sale.
The sale price of the coat is Ã, Â£136.

Work out the price of the coat before the sale.

£ ....

(3 marks)

Question 23

Find the percentage decrease from 2500 to 2100.

.... %

Question 24

Write $\frac{5}{12}$ as a recurring decimal.

.... recurring

(2 marks)

Question 25

Write $\frac{7}{11}$ as a recurring decimal.

0. .... recurring

(2 marks)

Question 26

What is $0.\dot{5}$ as a fraction?

....

Question 27

Convert $0.\dot{7}\dot{6}$ to a fraction.

....

(2 marks)

Question 28

What is $0.\dot{1}0\dot{8}$ as a fraction?

....

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Question 29

Which of these fractions gives 0.363636... when written as a decimal?

[   ] $\frac{4}{10}$

[   ] $\frac{4}{11}$

[   ] $\frac{4}{12}$

[   ] $\frac{4}{13}$

[   ] $\frac{4}{14}$

Question 30

Select the fraction that is equivalent to $0.4 \, dot \, 1$

[   ] $\frac{41}{99}$

[   ] $\frac{41}{100}$

[   ] $\frac{37}{99}$

[   ] $\frac{37}{90}$

(1 mark)

Question 31

Use algebra to convert the recurring decimal $0.3 \, dot \, 8$ to a fraction in its simplest form.

....

(2 marks)

Question 32

What is $0.1 \, dot \, 4$ as a fraction? Give your fraction **in its simplest form**.

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....

Question 33

Write $0.4\dot{5}\dot{7}$ as a fraction in its simplest form.

....

(3 marks)

Question 34

Work out

$$4.5 \times 0.\dot{1}\dot{7}$$

Give your answer as a simplified fraction

....

Question 35

Work out

$$1.5 \times 0.5\dot{3}$$

Give your answer as a simplified fraction

....

Answers

Question 1

$\frac{31}{35}$

Question 2

$4\frac{5}{12}$

$\frac{5}{3} + \frac{11}{4}$		3	M1	converts to improper fractions
$\frac{20}{12} + \frac{33}{12}$			M1	converts to fractions with the same common denominator
$\frac{53}{12} = 4\frac{5}{12}$	Shown		A1	Dep on M2

Alternative method

$\frac{2}{3} + \frac{3}{4} = \frac{8}{12} + \frac{9}{12}$			M1	correct method to add proper fractions
$\frac{17}{12} = 1\frac{5}{12}$			M1	
$1\frac{5}{12} + 1 + 2 = 4\frac{5}{12}$	Shown		A1	Dep on M2

Question 3

$\frac{23}{36}$

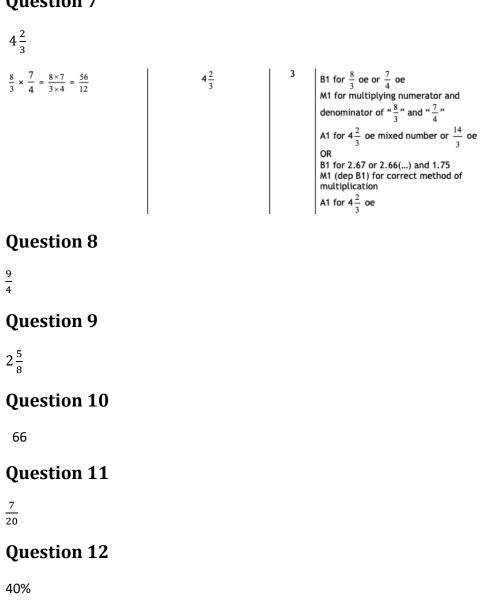|	
$\frac{23}{36}$	**1m** Accept equivalent fractions or an **exact** decimal equivalent, e.g. $0.63\dot{8}$ (accept any unambiguous indication of the recurring digits). **Do not** accept rounded or truncated decimals.

Question 4

$1\frac{13}{20}$

Question 5

36

Question 6

$\frac{2}{5}$

Question 7

$4\frac{2}{3}$

$\frac{8}{3} \times \frac{7}{4} = \frac{8 \times 7}{3 \times 4} = \frac{56}{12}$		$4\frac{2}{3}$	3	B1 for $\frac{8}{3}$ oe or $\frac{7}{4}$ oe M1 for multiplying numerator and denominator of "$\frac{8}{3}$" and "$\frac{7}{4}$" A1 for $4\frac{2}{3}$ oe mixed number or $\frac{14}{3}$ oe **OR** B1 for 2.67 or 2.66(...) and 1.75 M1 (dep B1) for correct method of multiplication A1 for $4\frac{2}{3}$ oe

Question 8

$\frac{9}{4}$

Question 9

$2\frac{5}{8}$

Question 10

66

Question 11

$\frac{7}{20}$

Question 12

40%

Question 13

0.85

Question 14

$\frac{9}{20}$

$\frac{9}{20}$ final answer		2	**B1** for $\frac{45}{100}$ or equivalent fraction

Question 15

0.375

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Question 16

24 grams

24	M1	for method to find 15% of 160, eg $160 \times \frac{15}{100}$ oe (= 24) **or** 10% = 160 ÷ 10 (= 16) plus 5% = "16" ÷ 2 (= 8) (= 24)
	A1	cao SC B1 for answer of 136 or 184 if M0 scored

Question 17

$ 238

$\frac{15}{100} \times 280$ or 42			3	M1		M2 for $\frac{85}{100} \times 280$
$280 - "42"$				M1	dep	
		238		A1	cao	

Question 18

20 %

20		2	**M1** for 36 ÷ 180 Or **B1** for 0.2 oe

Question 19

£ 98.70

2m	£ 98.70
or 1m	Shows the digits 987 or Shows or implies the addition of the three values corresponding to 10%, 5% and $2\frac{1}{2}$% eg ▪ 8.4 + 4.2 + 2.1 ▪ 14.7 seen ▪ The sum of their 3 values from part (a) seen [with or without addition to 84] or Shows or implies a complete correct method with not more than one computational error eg ▪ 1.175 × 84 ▪ $84 + \frac{17.5}{100} \times 84$

Question 20

£ 19500

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9	75% = 14 625	M1	oe 14 625 ÷ 3 or 4875
	$\dfrac{14\,625 \times 100}{75}$ or 14 625 ÷ 0.75 or 14 625 ÷ 75 or 195	M1dep	oe 14 625 + their 4875 or 4 × their 4875
	19 500	A1	
Additional Guidance			
14 625 × 75 ÷ 100			M0

Question 21

62.5 % increase

Question 22

£ 160

160	3	**M2** for 136 ÷ 0.85 **oe** Or **B1** for 0.85 seen or 85% seen or $\dfrac{85}{100}$ seen

Question 23

16 %

Question 24

0.416 recurring

0.41$\dot{6}$	2	**B1** for answer 0.41...	For 2 marks accept e.g. 0.4166[6]… or 0.416r

Question 25

0. 63 recurring

[0].$\dot{6}\dot{3}$	2	allow [0].6363[63…] for **2** **M1** for an attempt to divide 7 by 11 and getting as far as 0.6… correctly or 7 × .0909[09…] or an answer of .63 or .6$\dot{3}$

Question 26

$\dfrac{5}{9}$

Question 27

$\dfrac{76}{99}$

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$\frac{76}{99}$ | 2 | Mark final answer
M1 for 76.76... **seen**
or answer $\frac{k}{99}$

Question 28

$\frac{12}{111}$

Question 29

$\frac{4}{11}$

Question 30

$\frac{37}{90}$

$\frac{37}{90}$ | B1

Question 31

$\frac{7}{18}$

| $x = 0.3888888...$ $10x = 3.88888...$ $9x = 3.5$ $x = \frac{3.5}{9}$ | | | M1 | for method as far as attempting to subtract | eg $100x = 38.88888...$ $10x = 3.88888...$ $90x = 35$ $x = \frac{35}{90}$ | eg $1000x = 388.8888...$ $10x = 3.88888...$ $990x = 385$ $x = \frac{385}{990}$ |
| | $x = \frac{3.5}{9}$ | 2 | A1 | must reach $\frac{3.5}{9}$ or equivalent fraction **or** $18x = 7$ before reaching $\frac{7}{18}$ | | |

Question 32

$\frac{13}{90}$

Question 33

$\frac{151}{330}$

$x = 0.4575757...$ $10x = 4.575757...$ $1000x = 457.575757...$ $990x = 453$ **OR** $100x = 45.7575757...$ $99x = 45.3$	$\frac{151}{330}$	M1	for $0.4575757...$ or $0.4 + 0.05757...$
		M1	(dep) for two recurring decimals that when subtracted would give an integer or terminating decimal or for $\frac{453}{990}$
		A1	conclusion to proof to given fraction

Question 34

$\frac{17}{22}$

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$$4.5 \times 0.\dot{1}\dot{7} = \frac{9}{2} \times \frac{17}{99}$$

$$4.5 \times 0.\dot{1}\dot{7} = \frac{1}{2} \times \frac{17}{11}$$

$$4.5 \times 0.\dot{1}\dot{7} = \frac{17}{22}$$

Question 35

$\frac{4}{5}$

$$1.5 \times 0.5\dot{3} = \frac{3}{2} \times \frac{48}{90}$$

$$1.5 \times 0.5\dot{3} = \frac{3}{2} \times \frac{8}{15}$$

$$1.5 \times 0.5\dot{3} = \frac{1}{1} \times \frac{4}{5}$$