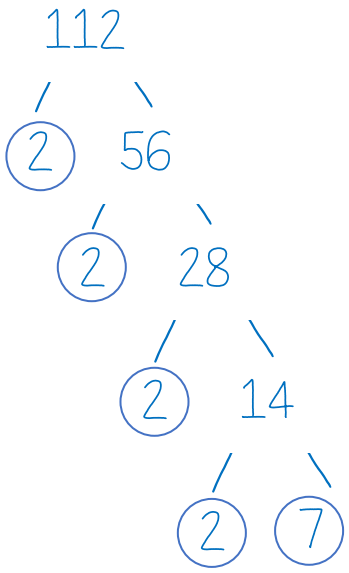
PRIME FACTORISATION (21)

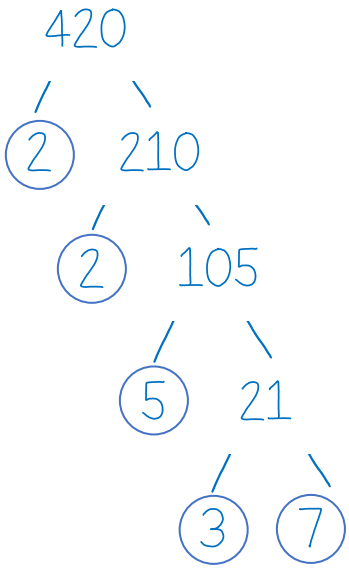
1 Write 112 as a product of its prime factors.



$2^4 \times 7$

(Total for Question 1 is 2 marks)

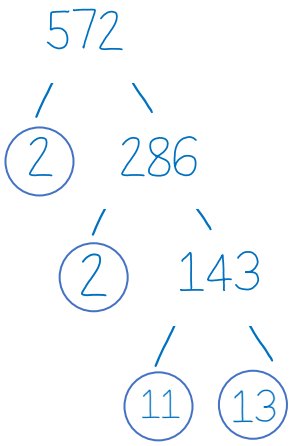
2 Write 420 as a product of its prime factors.



$2^2 \times 3 \times 5 \times 7$

(Total for Question 2 is 2 marks)

3 Write 572 as a product of its prime factors.



$2^2 \times 11 \times 13$

(Total for Question 3 is 2 marks)

FACTORS AND MULTIPLES (22)

1 (a) Write down **three** different factors of 36

1, 36

2, 18,

3, 12

4, 9

6, 6

Any three from:

1, 2, 3, 4, 6, 9, 12, 18, 36

1 , 2 , 36

(2)

(b) Write down a factor of 48 that is between 10 and 18

1, 48

2, 24

3, 16

4, 12

6, 8

12 or 16

(1)

(c) Write down all the factors of 54

1, 54

2, 27

3, 18

6, 9

1, 2, 3, 6, 9, 18, 27, 54

(2)

(Total for Question 1 is 5 marks)

2 (a) Here is a list of numbers

1 14 22 42 52

From the list, write down a multiple of 4

52

(1)

(b) Write down a 4 digit number that is a multiple of 5

(any 4 digit number that ends in 0 or 5)

2680 .....

(1)

(c) Write down the multiple of 9 that is between 74 and 88

9, 18, 27, 36, 45, 54, 63, 72, 81, 90...

81 .....

(1)

(d) Here is a list of numbers.

35 50 65 80 105 115

One of these numbers is a multiple of 15

Which number?

15, 30, 45, 60, 75, 90, 105, 120...

105 .....

(1)

(Total for Question 2 is 4 marks)

3 Two different numbers sum to 154.

The product of these two numbers is 3993.

These numbers are both multiples of 11.

What are the two numbers?

11, 22, 33, 44, 55, 66, 77,

88, 99, 110, 121, 132...

33 ..... , 121 .....

(Total for Question 3 is 3 marks)

HCF AND LCM (23)

1 (a) Find the highest common factor (HCF) of 12 and 54

Factors of 12

1, 12

2, 6,

3, 4

Factors of 54

1, 54

2, 27

3, 18

6, 9

6 .....

(2)

(b) Find the lowest common multiple (LCM) of 6 and 14

Multiples of 6: 6, 12, 18, 24, 30, 36, 42, 48...

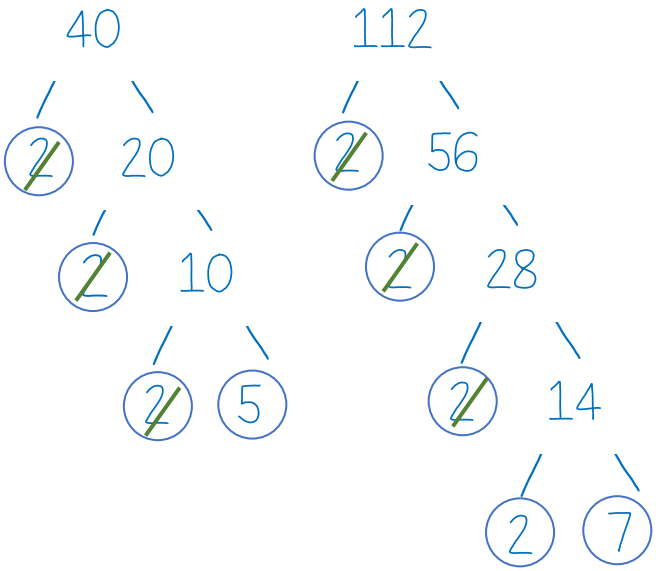
Multiples of 14: 14, 28, 42...

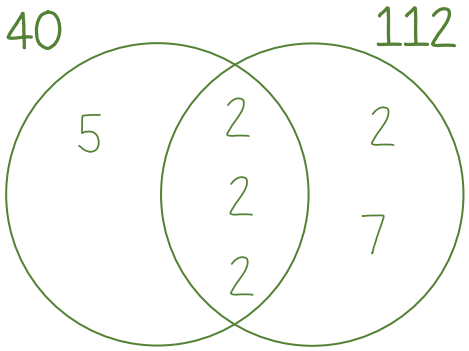
42 .....

(2)

(Total for Question 1 is 4 marks)

2 (a) Find the highest common factor (HCF) of 40 and 112





HCF → Multiply all numbers in the intersection

$2 \times 2 \times 2 = 8$

8 .....

(2)

(b) Find the lowest common multiple (LCM) of 40 and 112

LCM → Multiply every number in the venn diagram

$2 \times 2 \times 2 \times 2 \times 5 \times 7 = 560$

560 .....

(2)

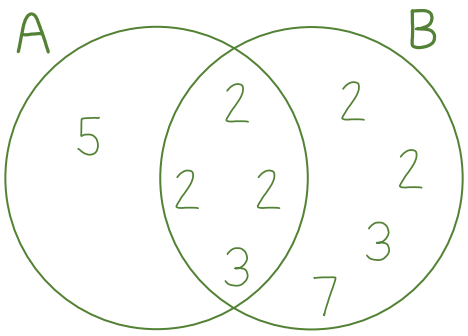
(Total for Question 2 is 4 marks)

3 A and B are numbers such that

$A = 2^3 \times 3 \times 5$ → $2 \times 2 \times 2 \times 3 \times 5$

$B = 2^5 \times 3^2 \times 7$ → $2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 7$

(a) Find the highest common factor (HCF) of A and B



$2 \times 2 \times 2 \times 3 = 24$

24

(1)

(b) Find the lowest common multiple (LCM) of A and B

Multiply every number in the venn diagram

$24 \times 2 \times 2 \times 3 \times 5 \times 7 = 10{,}080$

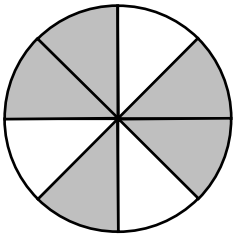
10 080

(2)

(Total for Question 3 is 3 marks)

FRACTIONS (SHADED SHAPES) (24)

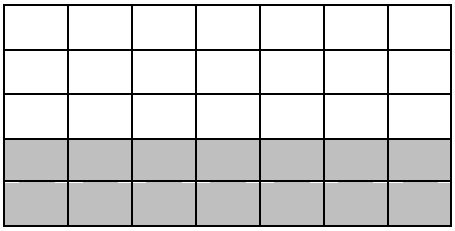
1 What fraction of this shape is shaded?



$\frac{5}{8}$

(Total for Question 1 is 1 mark)

2 Here is a grid of rectangles.



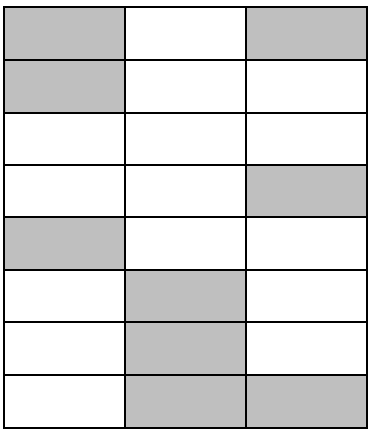
What fraction of the grid is shaded?
Give your answer in its simplest form.

$\frac{14}{35}$

$\frac{14}{35}$

(Total for Question 2 is 2 marks)

3 What fraction of the shape is shaded?
Give your answer in its simplest form.



$\frac{9}{24}$

$\frac{3}{8}$

(Total for Question 3 is 2 marks)

SIMPLIFYING FRACTIONS AND EQUIVALENT FRACTIONS (25)

1 (a) Write the fraction $\frac{18}{60}$ in its simplest form.

$\frac{18}{60} \overset{\div 6}{=} \frac{3}{10}$

$\frac{3}{10}$

.....

(1)

(b) Write the fraction $\frac{26}{104}$ in its simplest form.

$\frac{26}{104} \overset{\div 2}{=} \frac{13}{52} \overset{\div 13}{=} \frac{1}{4}$

$\frac{1}{4}$

.....

(1)

(c) Write the fraction $\frac{27}{63}$ in its simplest form.

$\frac{27}{63} \overset{\div 9}{=} \frac{3}{7}$

$\frac{3}{7}$

.....

(1)

(Total for Question 1 is 3 marks)

2 (a) Write 15 centimetres as a fraction of 65 centimetres.
Give your answer in its simplest form.

$\frac{15}{65} \overset{\div 5}{=} \frac{3}{13}$

$\frac{3}{13}$

.....

(2)

(b) Write 4 metres as a fraction of 5 kilometres.
Give your answer in its simplest form.

1km = 1000m

5km = 5000m

$\frac{4}{5000} \overset{\div 4}{=} \frac{1}{1250}$

$\frac{1}{1250}$

.....

(2)

(Total for Question 2 is 4 marks)

3 (a) Here are some fractions.

$\frac{4}{10}$ $\frac{12}{60}$ $\frac{6}{15}$ $\frac{16}{40}$ $\frac{14}{35}$

One of these fractions is **not** equivalent to $\frac{2}{5}$

Which fraction?

$\frac{4}{10} \overset{\div 2}{=} \frac{2}{5}$ $\frac{12}{60} \overset{\div 12}{=} \frac{1}{5}$ $\frac{6}{15} \overset{\div 3}{=} \frac{2}{5}$

$\frac{16}{40} \overset{\div 8}{=} \frac{2}{5}$ $\frac{14}{35} \overset{\div 7}{=} \frac{2}{5}$

$\frac{12}{60}$

(1)

(b) Work out the missing number $\frac{12}{30} = \frac{\quad}{80}$

$\frac{12}{30} \overset{\div 3}{=} \frac{4}{10} \overset{\times 8}{=} \frac{32}{80}$

$\frac{32}{\quad}$

(2)

(c) Work out the missing number $\frac{\quad}{28} = \frac{25}{70}$

$\frac{10}{28} \overset{\times 4}{=} \frac{2.5}{7} \overset{\div 10}{=} \frac{25}{70}$

$\frac{10}{28}$

(2)

(Total for Question 3 is 5 marks)