Year 8 Maths Revision: Autumn Term

Your assessment could include any topics that you have been taught since the start of year 7, until the end of Autumn Term of year 8.

In addition to revision material given to you by your teacher, you should be using the mathswatch website to revise topics that you know you struggle with, especially from year 7.

Ask your teacher for your login details, and write them here:

vle.mathswatch.com

User:

Password:

Choose topics below that you know you need to revise, and log onto mathswatch to watch the video clips and try the questions.

YEAR 8 TOPICS	MathsWatch Clip number
Prime numbers and factorisation	N30b, N31a and N31b
Calculating with fractions	N36, N41, N42a, N42b
Positive and Negative numbers	N18, N19a, N19b
Sequences, expressions and equations	A4, A11, A12
YEAR 7 TOPICS	**MathsWatch Clip number**
Integer place value	N1a
Mental addition and subtraction	N3a and N4a
Written addition and subtraction of integers	N3b and N4b
Addition and subtraction of decimals	N13b and N14b
Multiplication and division of integers	N15a and N28a; N16 and N29a
Area	G9, G20a, G20b, G20c and G20d
Multiplication and division of decimals	N15b, N28b and N29b
Mean	S7
Time	N7b
Converting between units	N7a
Angles and angle properties of straight lines	G10b, G10c and G13
Properties of triangles	G16
Properties of quadrilaterals	G14

Symmetry and tessellation	G3
Equivalent fractions	N23b
Fractions of amounts	N33
Multiplying and dividing fractions	N42a and N42b
Order of Operations	N20
Algebra	A4, A6, A8, A9 and A10
Percentages	N24b

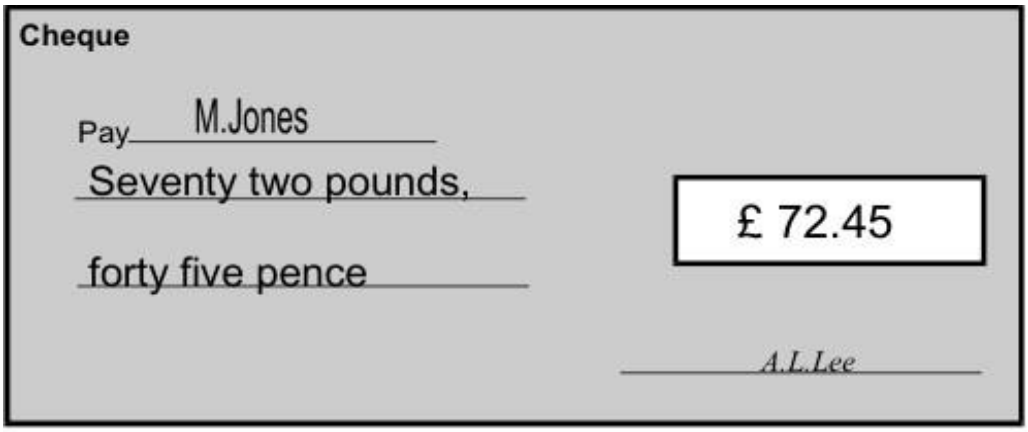
The rest of this booklet contains questions in the style that you will find in the assessment. Plan to do a page a day – or follow your teacher's instructions. If you find any questions difficult, look up the topic on mathswatch and ask your teacher for help.

If you are in set 1 (or doing well in set 2), ask your teacher for extension material as your assessment may also include harder questions.

Question 1

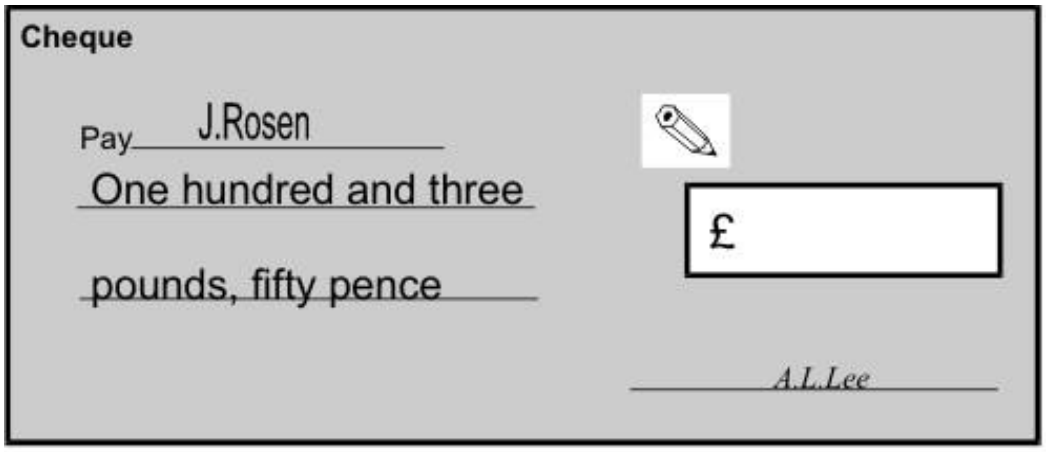
Mrs. Lee is writing some cheques.

She writes a cheque for **seventy two pounds and forty five pence** like this:



Mrs. Lee writes some more cheques.

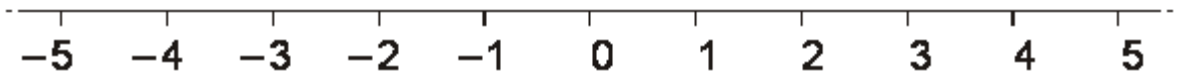
Write the value of the next cheque in n**umbers.**



(1 marks)

Question 2

Here is a number line. You can use it to help you work out the answers to the calculations below.



a) –3 + 2 = ……..……..

b) –4 + 5 = ……..……..

c) 3 – 7 = ……..……..

(3 marks)

Question 3

Put the correct **sign**, < or = or >, into each number sentence.

(a) 3 ..... –2

(1 mark)

(b) –5 ..... –8

(1 mark)

(c) 3 – 7 ..... –5

(1 mark)

Question 4

Find the lowest common multiple of 3 and 7

(2 marks)

Question 5

Sara is thinking of two numbers.
Her two numbers have a **negative product**, but a **positive sum**.
Give an example of what her numbers could be.

..... and .....

(1 mark)

Question 6

(a) Fill in the missing numbers.

25½ + ... = 27

150 - ..... = 27

50% of ..... = 27

a quarter of ..... = 27

(4 marks)

(b) Write numbers in each space below to make the calculations correct.

..... × ..... = 27

..... × ..... = 2 . 7

(2 marks)

Question 7

Look at the fraction diagram.

<table>
<tr><td colspan="6">1</td></tr>
<tr><td colspan="3">$\frac{1}{2}$</td><td colspan="3">$\frac{1}{2}$</td></tr>
<tr><td colspan="2">$\frac{1}{3}$</td><td colspan="2">$\frac{1}{3}$</td><td colspan="2">$\frac{1}{3}$</td></tr>
<tr><td>$\frac{1}{6}$</td><td>$\frac{1}{6}$</td><td>$\frac{1}{6}$</td><td>$\frac{1}{6}$</td><td>$\frac{1}{6}$</td><td>$\frac{1}{6}$</td></tr>
</table>

Write the missing numbers in the boxes below.

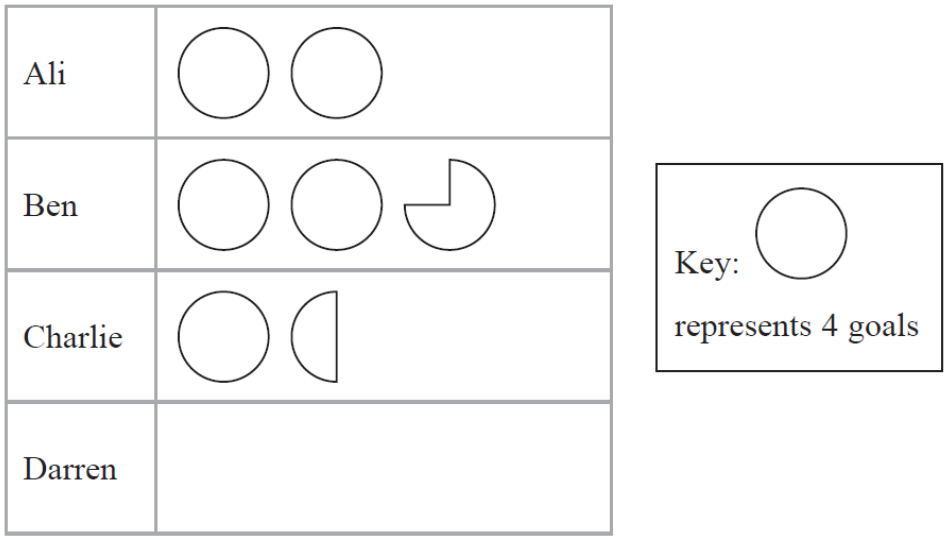
$$\boxed{1} = \frac{\square}{\boxed{6}}$$

$$\frac{\boxed{1}}{\boxed{2}} = \frac{\square}{\boxed{6}}$$

(2 marks)

Question 8

Here is a pictogram.
It shows the number of goals scored by Ali, by Ben and by Charlie.



(a) Who scored the least number of goals, Ali or Ben or Charlie?

(1 mark)

(b) Write down the number of goals scored by Ali.

(1 mark)

(c) Write down the number of goals scored by Ben.

(1 mark)

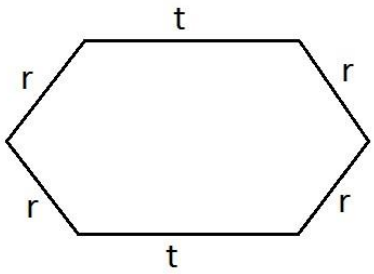
Darren scored 10 goals.

(d) Show this information on the pictogram.

(1 mark)

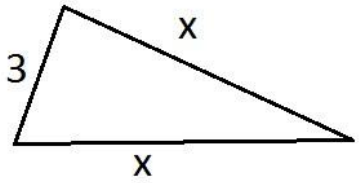
Question 9

The perimeter of this shape is **p = 4r + 2t**

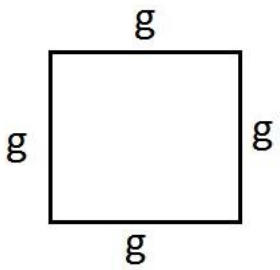


Write an expression for the perimeters of each of these shapes.

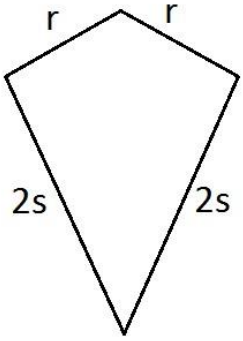
Write each expression in its simplest form.



P = ……..……



P = ……..……



P = ……..……

(3 marks)

Question 10

Work out **15% of 120** you must show all of your workings.

(2 marks)

Question 11

Expand this expression, simplifying where possible:

$$4(r - 2) + 3(r + 5).$$

(3 marks)

Question 1

Calculate:

(a) -3 + 5 =

(b) 4 – 7 =

(c) 3 – – 4 =

(d) – 2 + – 3 =

(4 marks)

Question 2

Calculate:

(a) $-3 \times 5 =$

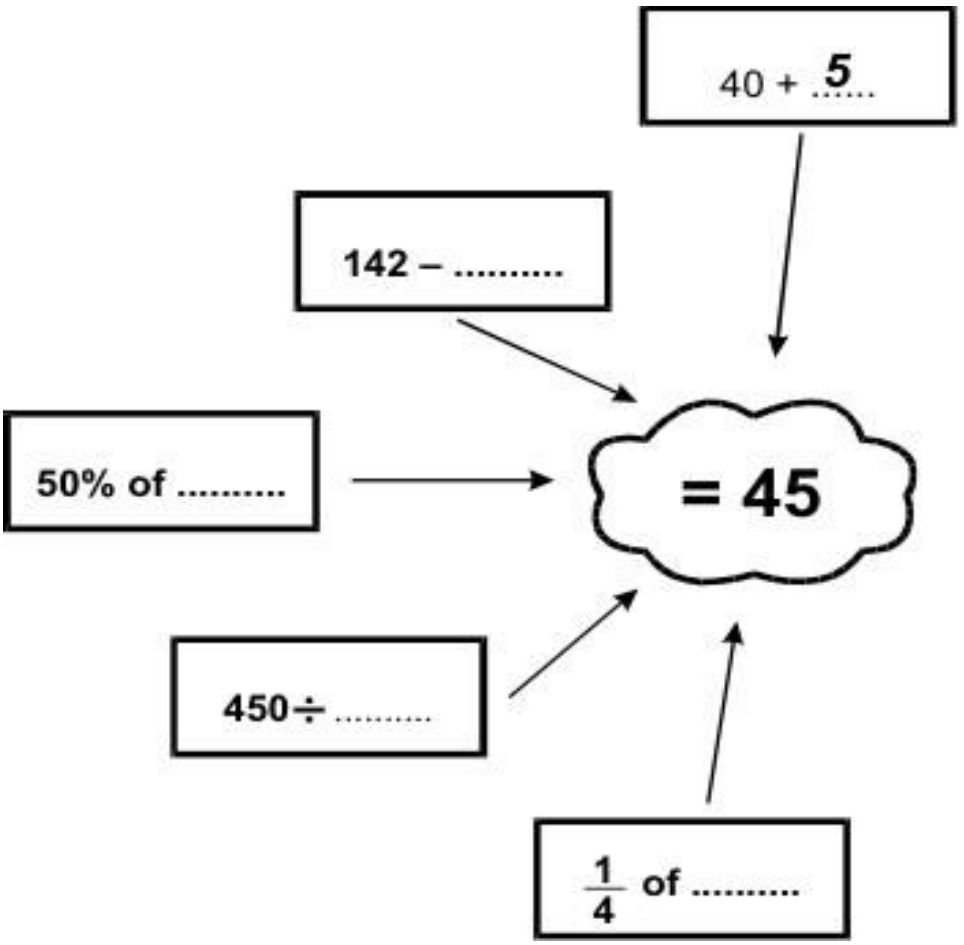
(b) $8 \div -4 =$

(c) $-7 \times -3 =$

(3 marks)

Question 3

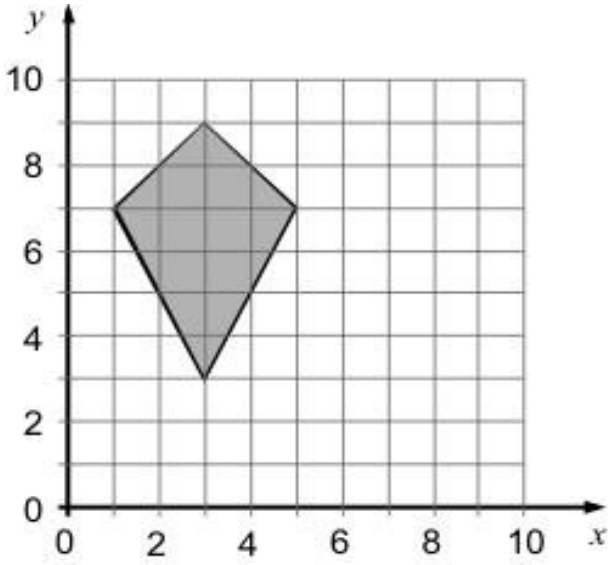
Fill in the missing numbers so that the answer is **always 45.** The first one is done for you.



(4 marks)

Question 4

Look at the shaded shape.



Two statements below are correct.
Tick the correct statements.

The shape is a **quadrilateral.** ☐

The shape is a **trapezium**. ☐

The shape is a **pentagon**. ☐

The shape is a **kite.** ☐

The shape is a **parallelogram**. ☐

(1 mark)

Question 5

(a) Work out $\frac{3}{5}$ of **£10**

(2 mark)

(c) Is $\frac{2}{3}$ of **£15** the same amount as $\frac{1}{3}$ of **£30**?
Explain how you know.

(2 mark)

Question 6

Write **numbers** in the boxes to make the statements true.

When x = ☐ then $x + 3$ = ☐

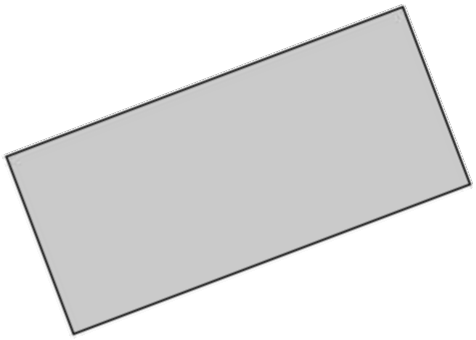
When x = ☐ then $3x$ = ☐

When x = ☐ then $\frac{x}{3}$ = ☐

(3 marks)

Question 7

The shaded rectangle is **twice as long** as it is wide. The **perimeter** of the rectangle is **30cm**.



What is the **area** of the rectangle?

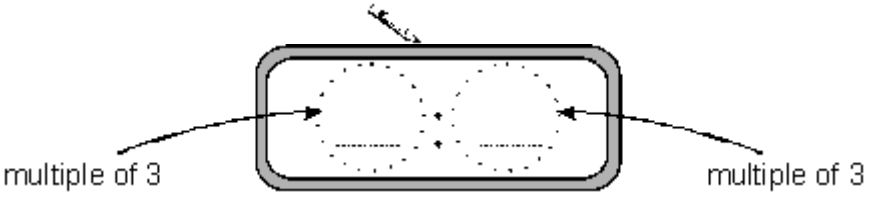
..... cm^2

(2 marks)

Question 8

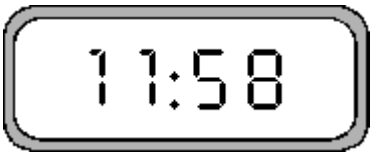
My clock shows: The hours and the minutes are both **multiples of 3**

Write a **different time** when the hours and the minutes are both multiples of 3



(1 mark)

Later, my clock shows:



How many minutes will it be before the hours and the minutes are both **multiples of 6**?

..... minutes

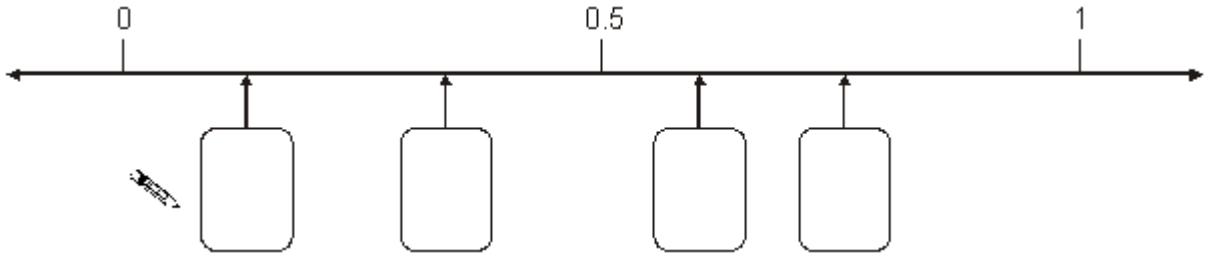
(1 mark)

Question 9

Here are four fractions.

$\frac{3}{4}$ $\frac{1}{8}$ $\frac{1}{3}$ $\frac{3}{5}$

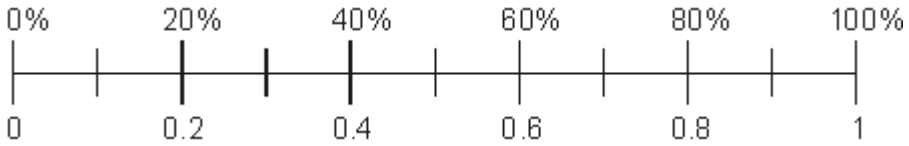
Look at the number line on the next page. Write each fraction in the correct box.



(2 marks)

Question 10

The scale shows both percentages and decimals.



Fill in the missing **decimals** in the gaps below.

The first one is done for you.

60% is the same as .....*0.6*.....

30% is the same as .....

(1 mark)

3% is the same as .....

(1 mark)

Question 11

The diagram shows part of a number grid. The grid has 6 columns. All the **prime numbers** in the grid are **circled**.

(43)	44	45	46	(47)	48
(37)	38	39	40	(41)	42
(31)	32	33	34	35	36
25	26	27	28	(29)	30
(19)	20	21	22	(23)	24
(13)	14	15	16	(17)	18
(7)	8	9	10	(11)	12
1	(2)	(3)	4	(5)	6

column X column Y

(a) 35 is not circled.
Explain why 35 is **not** a prime number.

(1 mark)

(b) There are no prime numbers circled in column Y.
Explain how you know there will **never** be a prime number in column Y.

(1 mark)

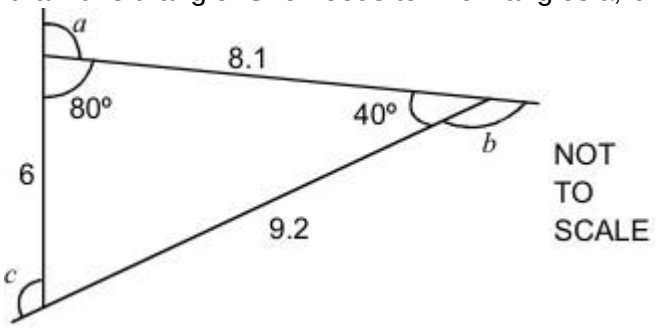
(c) There is one prime number circled in column X.
Explain how you know there will **never** be another prime number in column X.

(1 mark)

Question 12

Kay is drawing shapes on her computer.

(a) She wants to draw this triangle. She needs to know angles *a, b* and *c*.



Calculate angles a**,** b and c giving reasons for each of your answer.

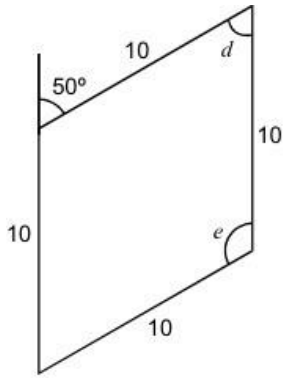
Angle *a* = ... ° because

Angle *b* = ... ° because

Angle *c* = ... ° because

(3 marks)

(b) Kay draws a rhombus:



NOT
TO
SCALE

Calculate angles *d* and *e* giving reasons for your answers.

Angle d = ... ° because

(1 mark)

Angle e = ... ° because

(2 mark)

Question 13

Find the missing numbers in this sequence;

1 , 4 , 9 , ……., 25

(1 mark)

Question 14

Write the missing numbers in these fraction sums.

$$\frac{1}{4} + \frac{\square}{8} = 1$$

(1 mark)

$$\frac{1}{3} + \frac{8}{\square} = 1$$

(1 mark)

Question 15

The nth term of a sequence is 3n + 7. Write down the fifth term of the sequence.

5^{th} term = ……..……

(1 mark)

Look at this sequence of numbers;

2, 5, 8, 11, …, …,

Find the **nth term** of this sequence

n^{th} term = ……...……

(2 mark)

(a) Is 150 an integer in this sequence? Give a reason for your answer;

.....

.....

……

……

(2 mark)

Question 16

Calculate each of the following leaving your answer in its simplest form

(a) $\frac{2}{7} \times \frac{14}{15} =$

……..……

(2 marks)

(b) $\frac{2}{7} \div 4 =$

……..……

(2 marks)

Question 17

(a) Put these values in order of size with the **smallest first**.

5^2 3^2 3^3 2^4

....
smallest largest

(2 marks)

(b) Explain why the **difference** between $\mathbf{3^2}$ and $\mathbf{3^3}$ is **18**

.....

.....

(1 mark)

Question 18

Explain why $\sqrt{\ }$ must be between 9 and 10.

.....

.....

(1 mark)

Question 19

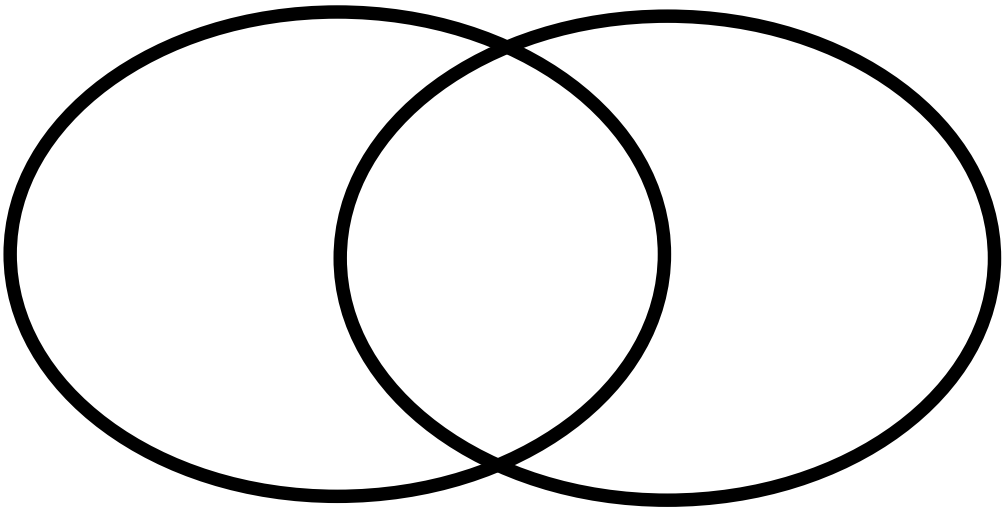
Write numbers in the boxes so that the fractions are in size order.

$\frac{1}{4}$ $\frac{\square}{7}$ $\frac{1}{\square}$ $\frac{3}{5}$ $\frac{2}{\square}$

(2 marks)

Question 20

Find the Highest Common Factor (HCF) of 24 and 60. The Venn diagram below may help.



HCF of 24 and 60 is ……..……

(4 marks)

Question 21

(a) Work out the answer.

2 + (16 ÷ 2) + 6 = ...

(1 mark)

(b) Put brackets in the calculation below to make it correct.

2 + 16 ÷ 2 + 6 = 4

(1 mark)