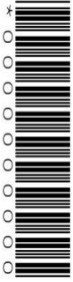


GCSE (9–1) Mathematics
J560/02 Paper 2 (Foundation Tier)

Practice paper 2 – Set 2
Time allowed: 1 hour 30 minutes



You may use:

- geometrical instruments
- tracing paper

Do not use:

- a calculator

First name											
Last name											
Centre number							Candidate number				

INSTRUCTIONS

- Use black ink. You may use an HB pencil for graphs and diagrams.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Read each question carefully before you start to write your answer.
- Where appropriate, your answers should be supported with working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided. Additional paper may be used if required, but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the barcodes.

INFORMATION

- The total mark for this paper is **100**.
- The marks for each question are shown in brackets [].
- This document consists of **18** pages.

Answer **all** the questions.

- 1 (a) Complete this table of fractions, decimals and percentages.

Fraction		Decimal		Percentage
	=	0.63	=	63%
	=	0.07	=	
$\frac{4}{5}$	=		=	

[3]

- (b) Write these decimals in order of size, smallest first.

17.3 1.5 17.06 1.08

(b)..... [1]
smallest

- (c) Work out.

(i) $4\frac{1}{2} - 1\frac{3}{4}$

(c)(i)..... [1]

(ii) $5 \times \frac{4}{7}$

Give your answer as a mixed number.

(ii) [2]

2 (a) Write down the next term in each of these sequences.

(i) 7 11 15 19

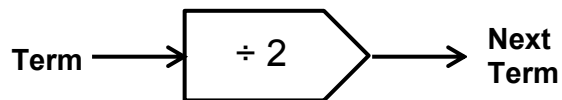
(a)(i) [1]

(ii) 1 3 6 10

(ii) [1]

(b) (i) The first term of a sequence is 12.

This is the rule for the sequence.

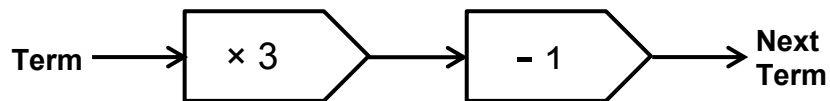


Write down the next two terms in the sequence.

(b)(i)..... , [1]

(ii) The first term in a different sequence is 2.

This is the rule for this sequence.



Write down the next two terms in this sequence.

(ii) , [1]

3 Football teams get 3 points for a win, 1 point for a draw and no points for a loss.

Churchton United have played 32 games and have a total of 57 points.
They have drawn 6 of their games.

How many games have they lost?

..... [4]

4 The factors of 14 are 1, 2, 7 and 14.

(a) Write down all the factors of 20.

(a) [2]

(b) Explain why 17 is a prime number.

.....
..... [1]

(c) Elizabeth says

All numbers have an even number of factors.

Explain why Elizabeth is wrong.

.....
..... [1]

- 5 (a) Two numbers are in the ratio 5 : 7.
The difference between the numbers is 12.

Work out the two numbers.

(a)and.....[2]

- (b) Three numbers have a mean of 9 and a mode of 7.

Work out the three numbers.

(b).....and.....and.....[2]

- 6 (a) Round 341.537

(i) to 2 decimal places,

(a)(i) [1]

(ii) to 1 significant figure.

(ii) [1]

- (b) Work out an estimate for

$$\frac{32.7 \times 4.1}{19.28}$$

(b) [2]

7 (a) Use the formula $V = p^3$ to find V when $p = 2$.

(a) [1]

(b) Harvey is given this problem.

S is a positive whole number.
Use the formula $S = \sqrt{ab}$ to find S when $a = 4$ and $b = 9$.

This is what Harvey wrote.

$$S = \sqrt{ab}$$

$$S = \sqrt{49}$$

$$S = 7$$

Harvey has made an error.

Explain the error that Harvey has made and give the correct answer.

.....

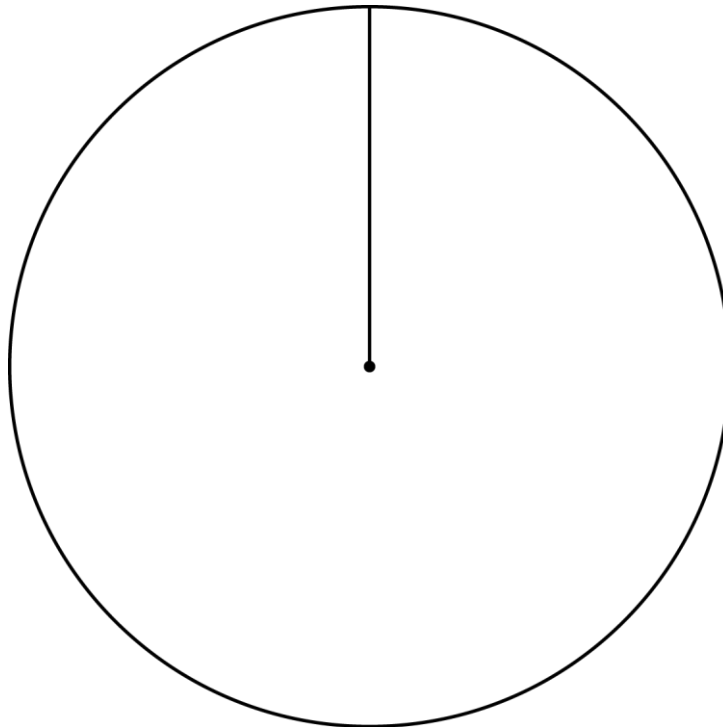
 [2]

8 Sophia was asked how she spends her leisure time.

She replied

- I play football for $\frac{1}{4}$ of the time
- I meet with my friends for $\frac{2}{5}$ of the time
- I use my tablet for $\frac{3}{20}$ of the time
- I listen to music for the rest of the time.

(a) Complete the pie chart showing how Sophia spends her leisure time.



[4]

(b) What fraction of her leisure time does Sophia spend listening to music?

(b) [1]

9 (a) Convert 485 cm to metres.

(a) m[1]

(b) (i) Zara says

10 litres = 18 pints.

Use Zara's conversion to convert 25 litres into pints.

(b)(i).....pints[2]

(ii) Jacob says

5 miles = 8 kilometres.

Use Jacob's conversion to convert 44 kilometres into miles.

(ii)miles[2]

- 10 (a)** A bag contains only green counters and black counters in the ratio 2 : 7.
There are 45 counters in the bag.

How many counters are black?

(a) [2]

- (b)** A different bag contains only red counters, blue counters and yellow counters in the ratio 4 : 6 : 11.

There are 54 blue counters.

- (i)** How many counters are red?

(b)(i) [2]

- (ii)** A counter is taken at random from the bag.

What is the probability that it is yellow?

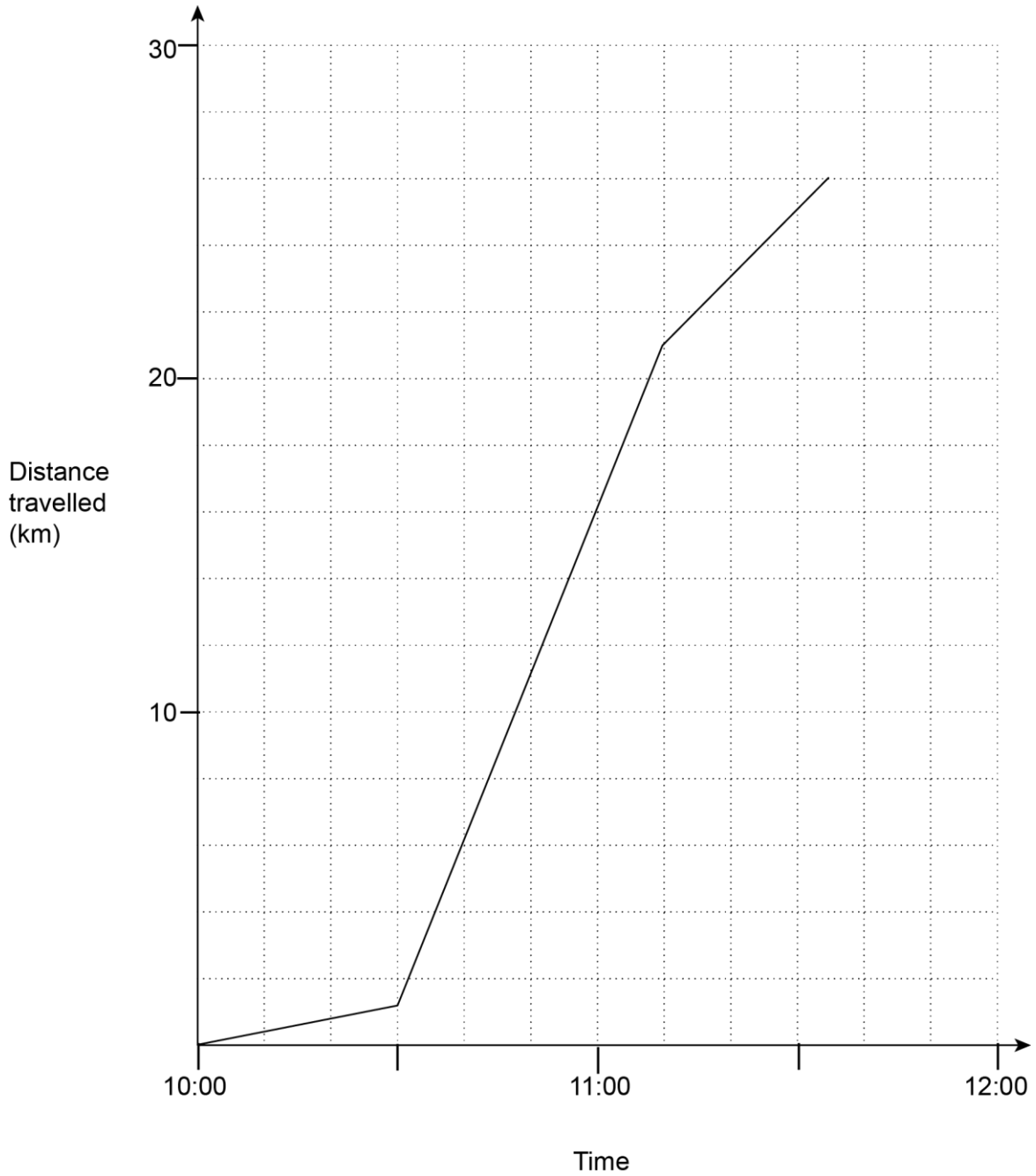
(ii) [1]

- (c)** A different bag contains only purple counters and orange counters in the ratio $x : y$.
A counter is taken at random from the bag.

Complete the following statement with an algebraic expression.

The probability that this counter is purple is..... [2]

- 11 Rohit completed a triathlon. In the triathlon he swam first, then cycled and finally ran. He was given this record of his triathlon.



- (a) State one assumption that was made when the graph was drawn.

.....
 [1]

- (b) How far did Rohit run?

(b)km [1]

(c) How long did Rohit cycle for?

(c)minutes [1]

(d) Work out Rohit's average speed when he was cycling.
Give your answer in km per hour.

(d)km per hour [3]

12 (a) A ship travels at a constant speed.
The ship travels 60 miles in 2 hours 30 minutes.

How far does it travel in 6 hours?

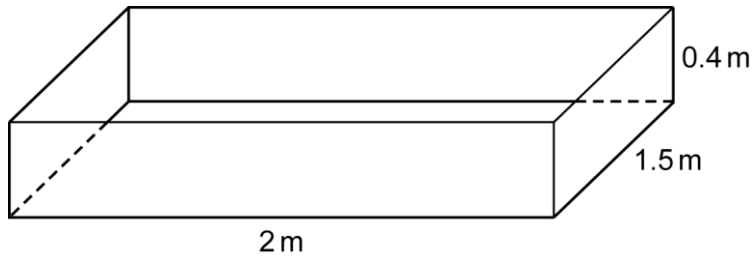
(a)miles [3]

(b) y is inversely proportional to x .
 $x = 5$ when $y = 12$.

Work out y when $x = 20$.

(b) [2]

- 13 Lily has an empty pool that is a cuboid with a height of 0.4 m.



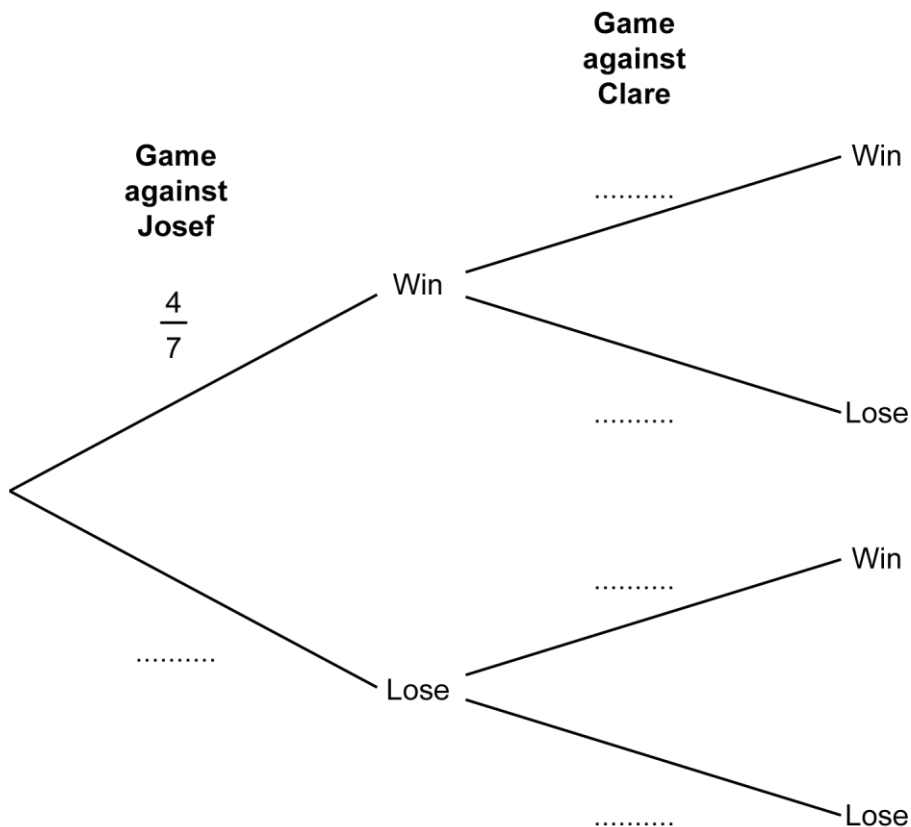
She fills the pool at a rate of 20 litres per minute.

How long does it take to fill the pool to a depth of 0.3 m?
[1000 litres = 1 m³]

..... minutes **[5]**

- 14 Kyle plays in a chess league.
 He has to play Josef and then play Clare.
 The probability of winning against Josef is $\frac{4}{7}$.
 The probability of winning against Clare is $\frac{3}{5}$.
 Kyle does not draw any games.

(a) Complete the tree diagram.



[2]

(b) What is the probability that Kyle will win both games?

(b) [2]

(c) What is the probability that Kyle will win exactly one of the two games?

(c) [3]

15 (a) Simplify.

$$a^3b \times a^2b^3$$

(a) [1]

(b) Factorise.

$$x^2 - 36$$

(b) [1]

(c) (i) Factorise.

$$x^2 - 2x - 15$$

(c)(i) [2]

(ii) Solve.

$$x^2 - 2x - 15 = 0$$

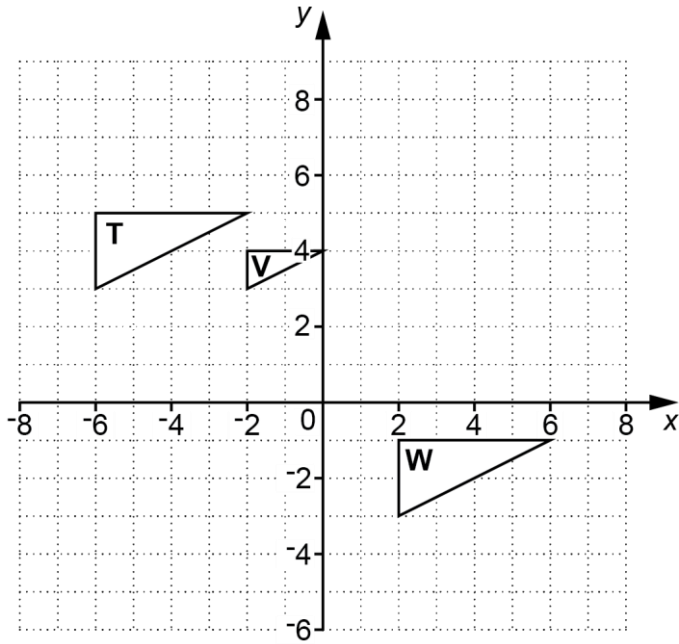
(ii) [1]

- 16** Aimee receives a 20% salary increase.
Her new salary is £18 000.

What was Aimee's salary before the increase?

£..... [3]

17 Three triangles are drawn on a coordinate grid.



(a) (i) Draw the image of triangle **T** after a reflection in the line $y = 0$. [2]

(ii) Draw the image of triangle **T** after a rotation 90° clockwise about $(0, 0)$. [2]

(b) (i) Describe fully the **single** transformation that maps triangle **T** onto triangle **W**.

 [2]

(ii) Describe fully the **single** transformation that maps triangle **T** onto triangle **V**.

 [3]

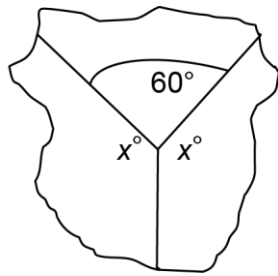
(c) Heather says

Any transformation always produces a shape that is congruent to the original shape.

Is her statement correct? Explain your reasoning.

..... [1]

18 Three **regular** polygons meet at a point.

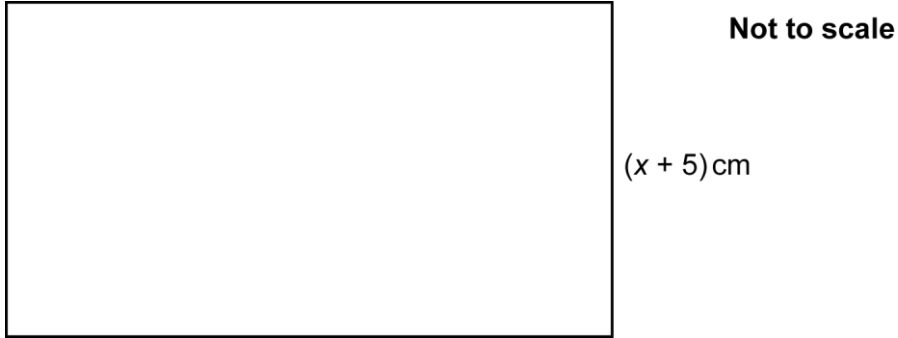


Not to scale

Find the number of sides of each of the three regular polygons in the diagram.

.....and.....and.....[6]

- 19 The width of this rectangle is $(x + 5)$ cm.



The ratio width : length for this rectangle is 1 : 2.
The perimeter of the rectangle is 48 cm.

Calculate the area of the rectangle.

..... cm²[6]

END OF QUESTION PAPER

OCR
Oxford Cambridge and RSA

Copyright Information:

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.