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MATHEMATICS

0580/12

Paper 1 (Core)

October/November 2023

1 hour

You must answer on the question paper.

You will need: Geometrical instruments

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You should use a calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
- For π , use either your calculator value or 3.142.

INFORMATION

- The total mark for this paper is 56.
- The number of marks for each question or part question is shown in brackets [].

This document has **12** pages. Any blank pages are indicated.

1 Write $\frac{8}{10}$ as a decimal.

..... [1]

2 Asha works in a café.

Her wage is calculated using the formula wage = hourly rate \times number of hours + bonus.

Her hourly rate is \$11.52.

One week Asha works 25 hours and receives a bonus of \$5.40.

Work out her wage for this week.

\$ [2]

3 These are the first four terms in a sequence.

-3 4 11 18

(a) Find the next term.

..... [1]

(b) Explain how you worked out your answer.

..... [1]

4 Work out $\frac{2}{5}$ of 180.

..... [1]

5 Write these numbers in order, starting with the smallest.

$\frac{3}{16}$ 18.7% 0.19 $\frac{9}{50}$

..... < < <
smallest [2]

6 Write down the number that is 9 greater than -23 .

..... [1]

7 For 16 days, Safia records the number of dresses she sells.

24	6	18	14	27	37	9	16
22	17	16	16	24	20	15	32

(a) Complete the stem-and-leaf diagram.

0	
1	
2	
3	

Key: 2|4 represents 24 dresses

[2]

(b) Write down the mode.

..... [1]

(c) Find the median.

..... [1]

8 Write 24.07839

(a) correct to 2 decimal places

..... [1]

(b) correct to the nearest 10.

..... [1]

9 $v = u + at$

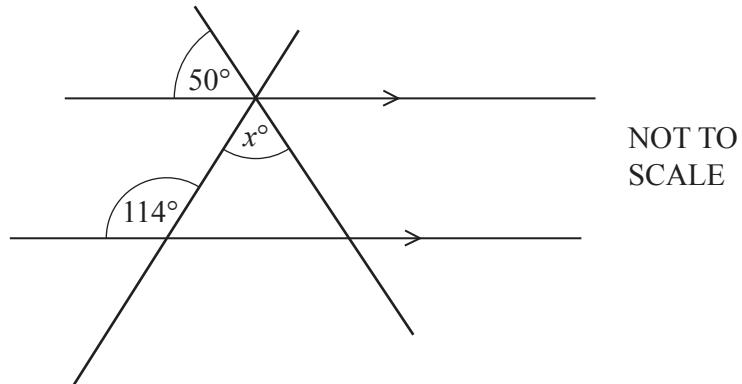
Find the value of v when $u = 30$, $a = -2$ and $t = 7$.

$v =$ [2]

10 Change 62 000 millimetres into kilometres.

..... km [1]

11



The diagram shows two straight lines crossing two parallel lines.

Find the value of x .

$x =$ [2]

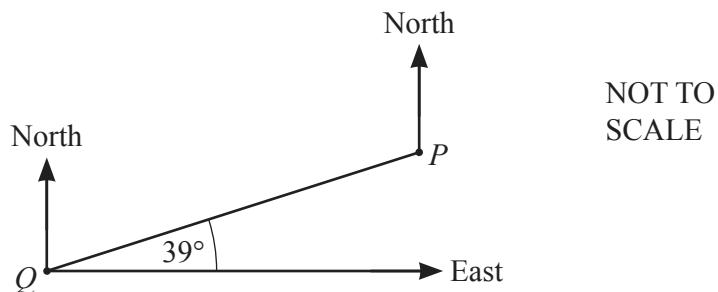
12 (a) Explain why 111 is not a prime number.

..... [1]

(b) Find a prime number between 110 and 120.

..... [1]

13



Find the bearing of Q from P .

..... [2]

14 (a) As the age of a car increases, the selling price decreases.

What type of correlation is this?

..... [1]

(b) Write down the type of correlation there is between the height of a driver and the value of their car.

..... [1]

15 Calculate the interior angle of a regular 9-sided polygon.

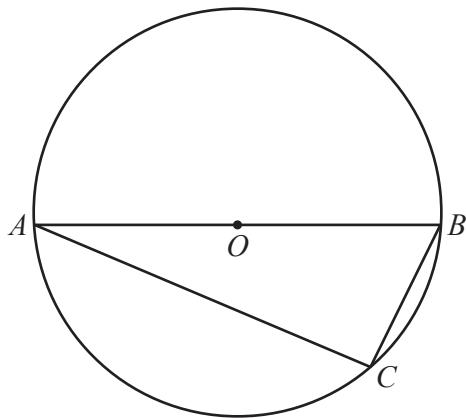
..... [2]

16 Filip invests \$4000 for 3 years at a rate of 2.5% per year simple interest.

Calculate the value of his investment at the end of the 3 years.

\$ [3]

17



NOT TO
SCALE

A, B and C are points on a circle, centre O.

(a) Draw a tangent to the circle at point A.

[1]

(b) The circumference of the circle is 22.3 cm.

Calculate the radius of the circle.

..... cm [2]

(c) Give a geometrical reason why angle BCA is 90° .

..... [1]

18 Expand and simplify.

$$2(t+w) + 3(w-t)$$

..... [2]

19 Without using a calculator, work out $3\frac{1}{8} - 1\frac{3}{4}$.

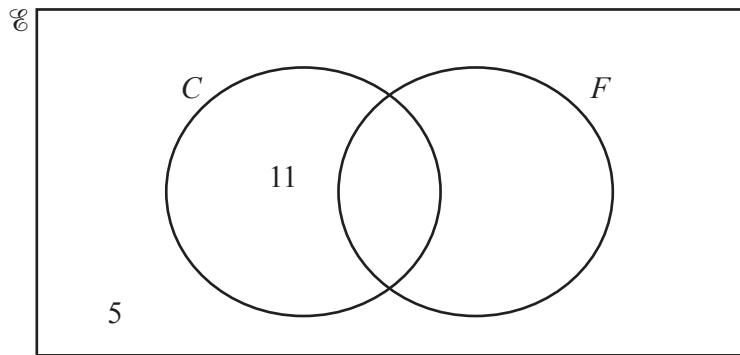
You must show all your working and give your answer as a mixed number in its simplest form.

..... [3]

20 $\mathcal{E} = \{\text{students in a class}\}$
 $C = \{\text{students who play cricket}\}$
 $F = \{\text{students who play football}\}$

There are 36 students in the class.
15 students play cricket.
20 students play football.

(a)



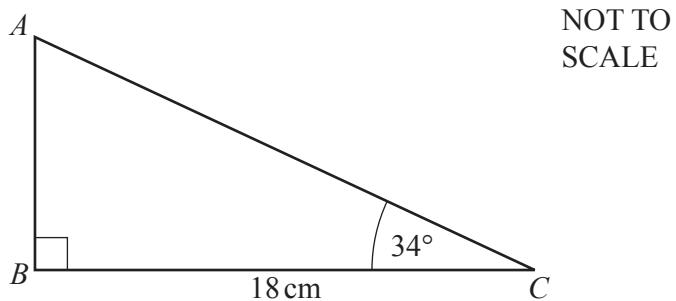
Complete the Venn diagram.

[2]

(b) Write down $n(C \cup F)$.

..... [1]

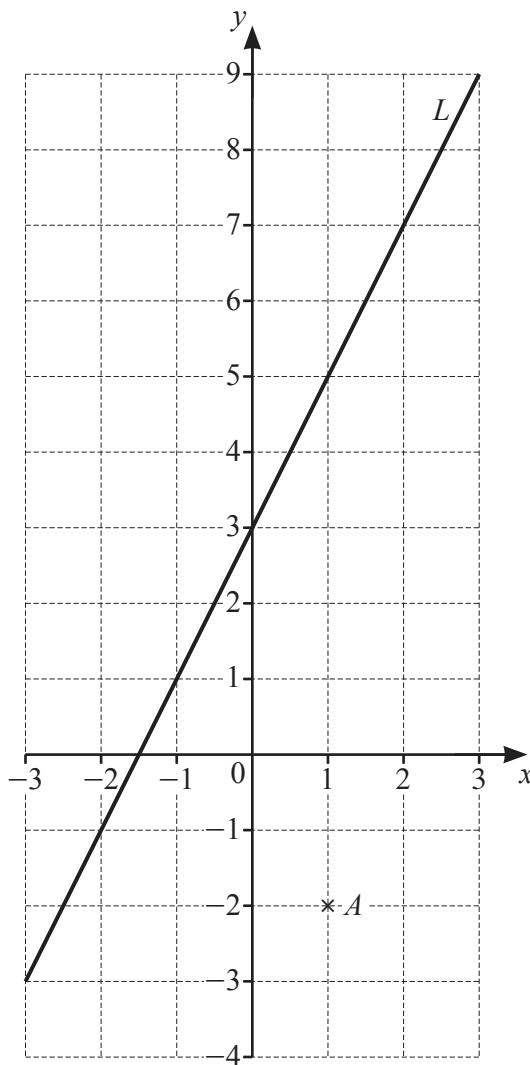
21 ABC is a right-angled triangle.



Calculate AC .

$AC = \dots$ cm [3]

22 Point A and line L are shown on the grid.



(a) Write down the coordinates of point A .

(.....,) [1]

(b) On the grid, plot the point $(-2, 4)$. [1]

(c) Find the equation of line L .

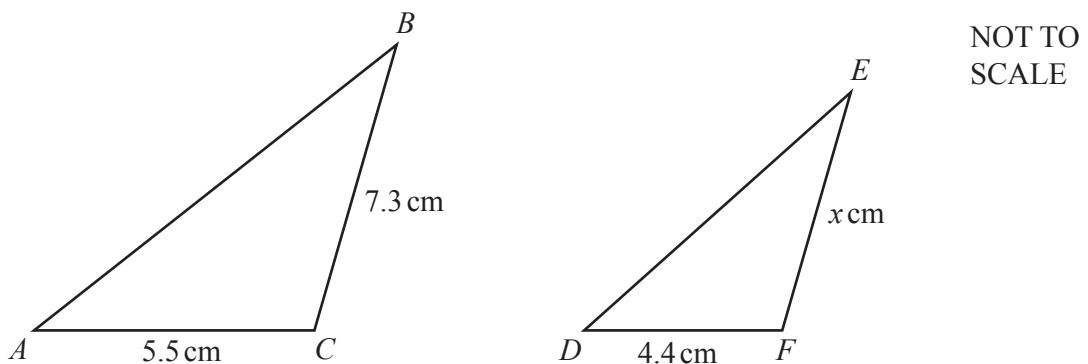
..... [3]

23 Bell A rings every 22 minutes.
 Bell B rings every 14 minutes.
 Both bells ring at 09 00.

Work out the next time both bells ring together.

..... [3]

24



Triangle ABC is mathematically similar to triangle DEF .

Calculate the value of x .

$x =$ [2]

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