Cambridge Assessment International Education

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0029907368

MATHEMATICS **0580/13**

Paper 1 Non-calculator (Core) **May/June 2025**

1 hour 30 minutes

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.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **20** pages. Any blank pages are indicated.

List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

Calculators must **not** be used in this paper.

1 **(a)** Write the number 70 000 000 in words.

..... [1]

(b) **(i)** Write down the value of the 5 in the number 0.25 .
Give your answer as a fraction.

..... [1]

(ii) Find the value of the reciprocal of 0.25 .

..... [2]

2 **(a)** Write down the mathematical name for an angle between 90° and 180°.

..... [1]

(b) Write down the mathematical term that describes two polygons that are the same shape and size.

..... [1]

3 **(a)** Write down $\sqrt{169}$.

..... [1]

(b) Work out the value of 2^4.

..... [1]

(c) Work out the value of 10^{-2}.

..... [1]

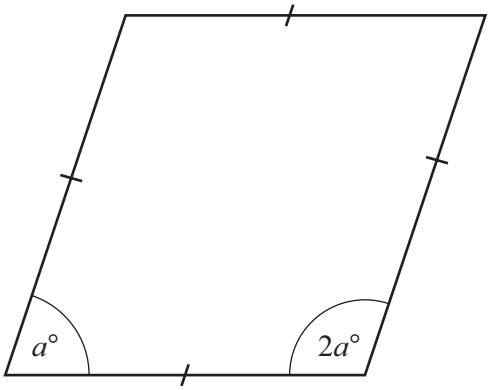
(d) Work out $-18 \div -4$.

..... [1]

(e) Work out 1.6×0.02 .

..... [1]

4 The diagram shows a quadrilateral with sides of equal length.



NOT TO SCALE

(a) Write down the mathematical name for this quadrilateral.

..... [1]

(b) Work out the value of a.

$a =$ ..... [2]

5 Find the next term in each sequence.

(a) 1, 5, 10, 16, 23, …

..... [1]

(b) 1, 2, 4, 8, 16, …

..... [1]

6 These are the lengths of time, in minutes, of seven phone calls.

10 22 5 7 35 8 75

(a) (i) Find the median.

..... min [2]

(ii) Find the range.

..... min [1]

(b) The longest phone call is 75 minutes.

Write 75 minutes in hours.

..... h [1]

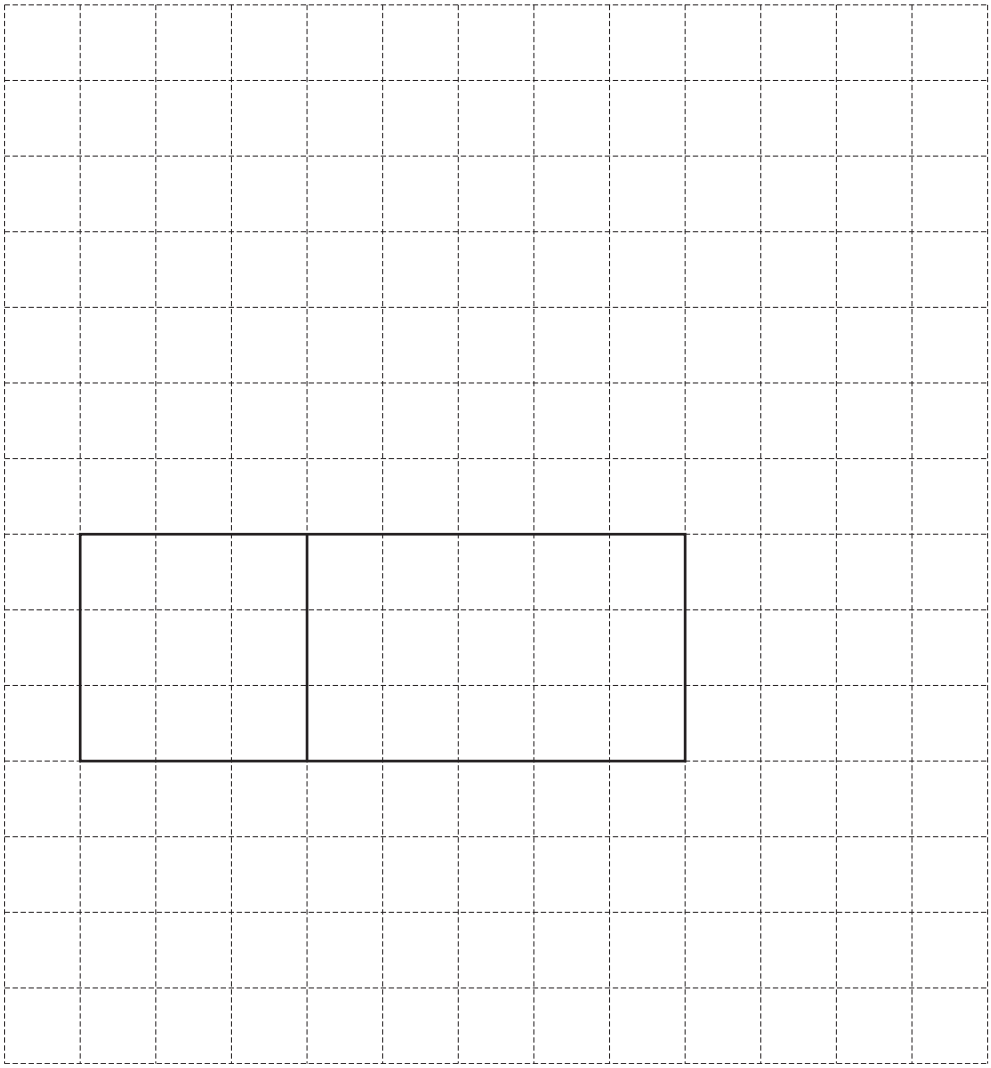
7 70 students study one of French, Spanish and German.

The ratio number who study French : number who study Spanish = 3 : 7.
15 students study French.

Find the number of students who study German.

..... [3]

8 The diagram shows two faces of a net of a cuboid on a 1 cm^2 grid.



(a) Complete the statement.

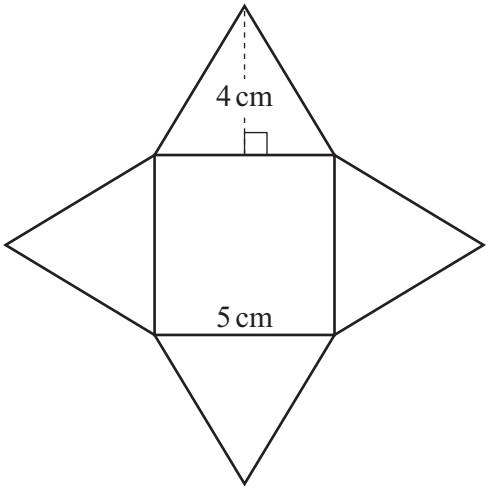
The dimensions of the cuboid are ..... cm by ..... cm by ..... cm. [1]

(b) On the grid, complete a net of the cuboid. [3]

(c) Work out the volume of the cuboid.

..... cm^3 [2]

9 The diagram shows the net of a square-based pyramid.



NOT TO SCALE

The perpendicular height of each triangle is 4 cm.
The base has side length 5 cm.

(a) Calculate the surface area of the pyramid.

..... cm^2 [2]

(b) Write down the number of edges of the square-based pyramid.

..... [1]

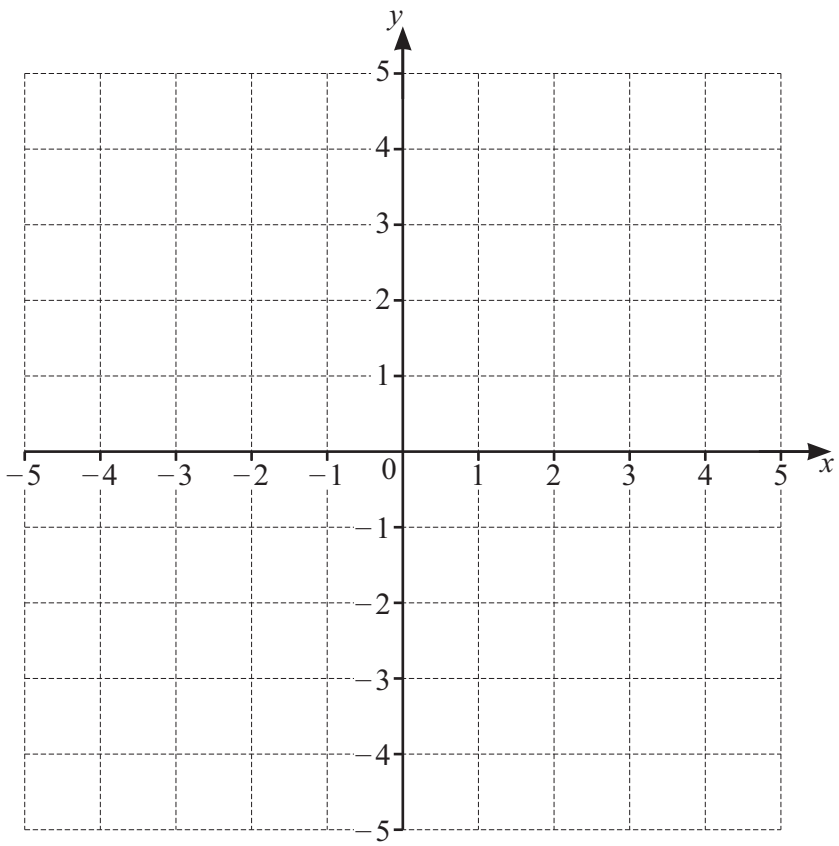
10 **(a)** Line A has equation $y = 3x + 1$.
Line B has equation $y = 3x - 1$.

Draw a ring around the description that is correct.

Line A intersects line B	Line A has a steeper gradient than line B	Line A is perpendicular to line B
Line A is parallel to line B	Line A and Line B intersect the y-axis at the same point	

[1]

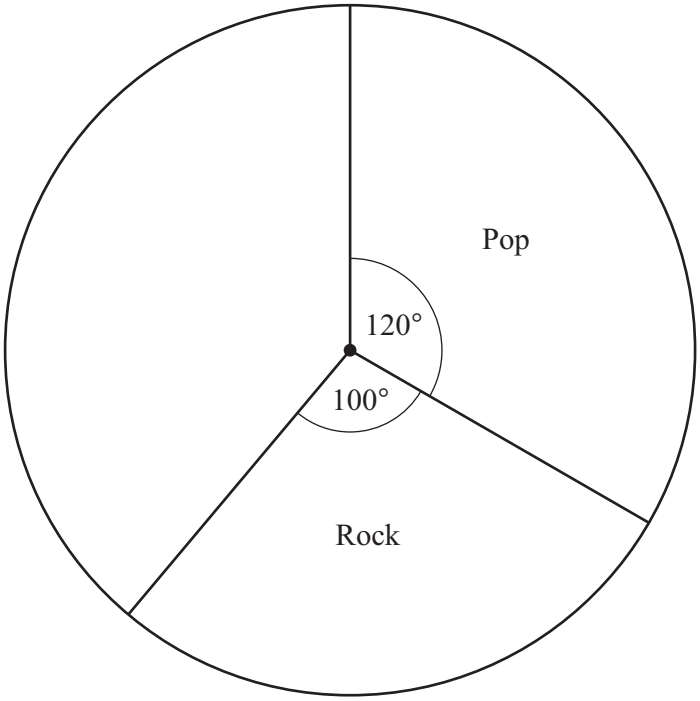
(b)



On the grid, draw the graph of $y = 2x - 1$.

[2]

11 Jo asks 90 people whether they prefer pop, rock, classical, jazz or folk music.
The pie chart shows some of the results.



(a) Work out the number of people who prefer pop.

..... [2]

(b) The sector angle for classical is 80°.

Draw this sector on the pie chart. [1]

(c) 9 people prefer jazz and the rest prefer folk.

(i) Work out the size of the sector angle for jazz.

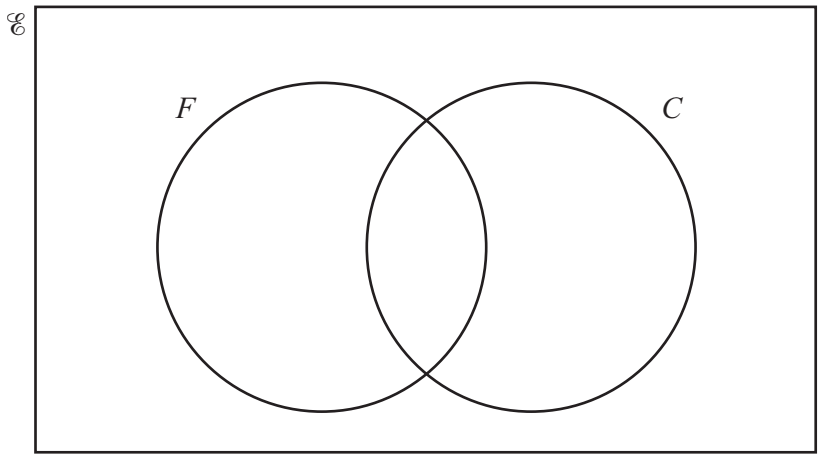
..... [2]

(ii) Complete the pie chart. [1]

12 A music group has 30 members.

7 members play a flute (F) and play a clarinet (C).
12 members play a flute.
1 member does not play a flute and does not play a clarinet.

(a) Use this information to complete the Venn diagram.



[2]

(b) Find n(C).

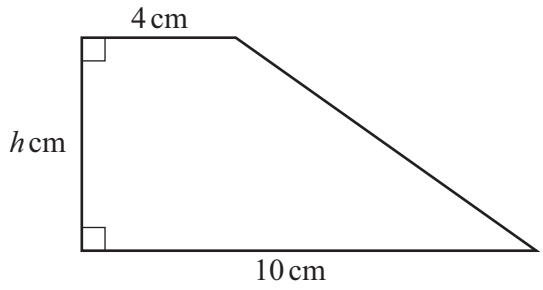
..... [1]

13 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

$$\frac{62.5}{9.7 \times 0.52}.$$

..... [2]

14



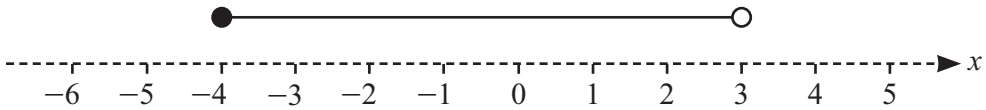
NOT TO SCALE

The diagram shows a trapezium.
The area of the trapezium is $42\,\text{cm}^2$.

Work out the value of h.

$h =$ ..... [2]

15 **(a)** Write down the inequality represented on the number line.



..... [2]

(b) Write down the smallest integer that satisfies the inequality $d > -3\frac{1}{4}$.

..... [1]

16 On Monday the cost of a concert ticket is $\$x$.
On Tuesday the cost of a ticket for the same concert is 20% more than the cost on Monday.

Jack buys 4 tickets on Monday and 5 tickets on Tuesday.
Jack pays \$270 in total.

Work out the value of x.

$x =$ ..... [3]

17 Simplify.

(a) $y^4 \times y^6$

..... [1]

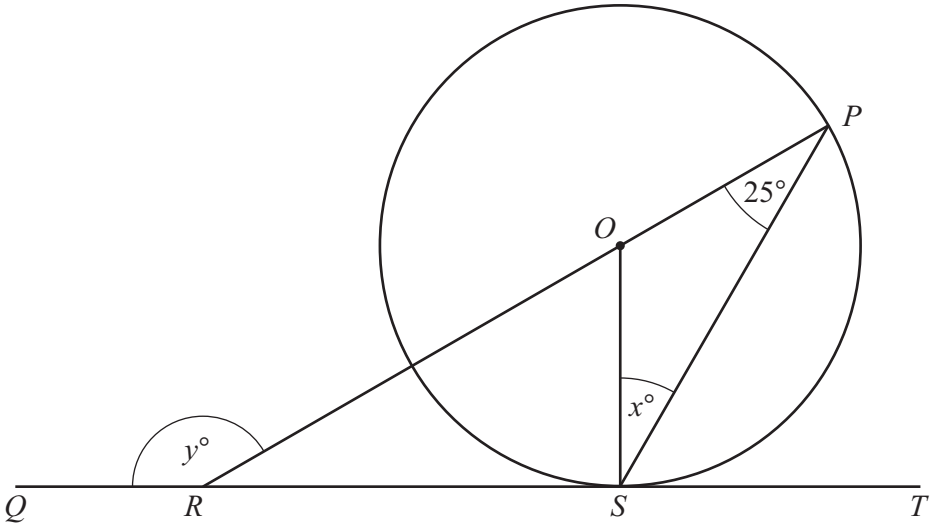
(b) $\frac{p^5}{p^8}$

..... [1]

(c) $\left(w^4\right)^3$

..... [1]

18



The diagram shows a circle, centre O.
P and S are points on the circle.
POR is a straight line.
$QRST$ is a tangent to the circle at S.

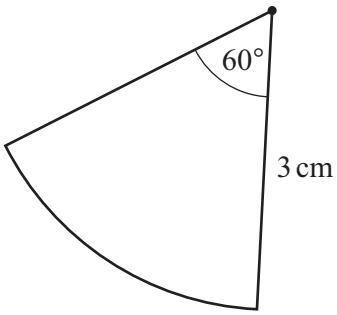
(a) Find the value of x.
Give a geometrical reason for your answer.

$x =$ ..... because ..... [2]

(b) Find the value of y.

$y =$ ..... [3]

19



NOT TO SCALE

The diagram shows a sector of a circle with radius 3 cm and sector angle 60°.

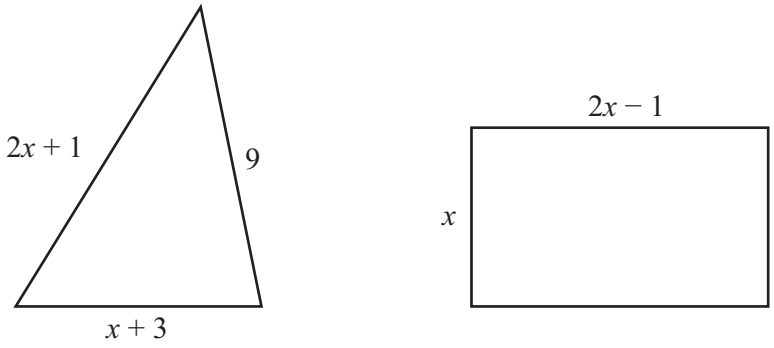
Calculate the area of the sector.
Give your answer in terms of π in its simplest form.

..... cm^2 [2]

20 Find the highest common factor (HCF) of 36 and 54.

..... [2]

21 In this question, all lengths are in centimetres.



NOT TO SCALE

The perimeter of the triangle is equal to the perimeter of the rectangle.

Form an equation and solve it to find the value of x.

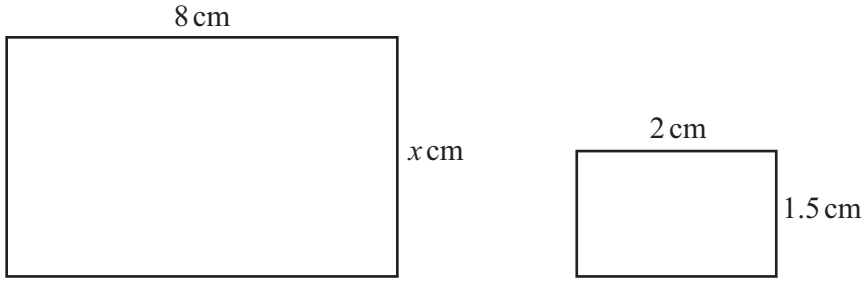
$x =$ ..... [4]

22 $g = \frac{h}{3} - 8$

Rearrange the formula to make h the subject.

$h =$ ..... [2]

23



NOT TO SCALE

Rectangle A Rectangle B

Rectangle A is mathematically similar to rectangle B.

Work out the value of x.

$x =$ ..... [2]

24 Work out $3\frac{1}{2} - 1\frac{4}{7}$.

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

..... [3]

25 Solve the simultaneous equations.

$$8x + 5y = 4$$
$$2x - y = 10$$

$x =$ .....

$y =$ ..... [3]

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