



# Cambridge IGCSE™

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## MATHEMATICS

0580/01

Paper 1 Non-calculator (Core)

For examination from 2025

PRACTICE PAPER

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 **18** 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  $h$ .  $V = \frac{1}{3}Ah$

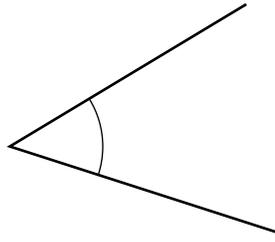
Volume,  $V$ , of cylinder of radius  $r$ , height  $h$ .  $V = \pi r^2 h$

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.

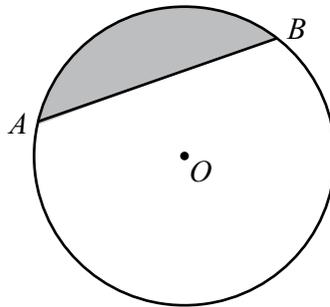
1 (a)



Write down the mathematical name for this type of angle.

..... [1]

(b)



NOT TO  
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$A$  and  $B$  lie on a circle, centre  $O$ .

(i) Write down the mathematical name for the shaded region.

..... [1]

(ii)  $OA = 8$  cm

Write down the length of the diameter of this circle.

..... cm [1]

2 Convert 5.3 kilometres into metres.

..... m [1]

- 3** Ahmed has \$10.  
Pens cost \$0.80 each.

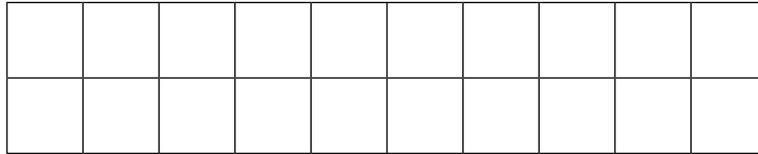
(a) Work out the maximum number of pens that Ahmed can buy.

..... [2]

(b) Work out the change Ahmed receives.

\$ ..... [1]

**4**



Shade  $\frac{3}{5}$  of this rectangle.

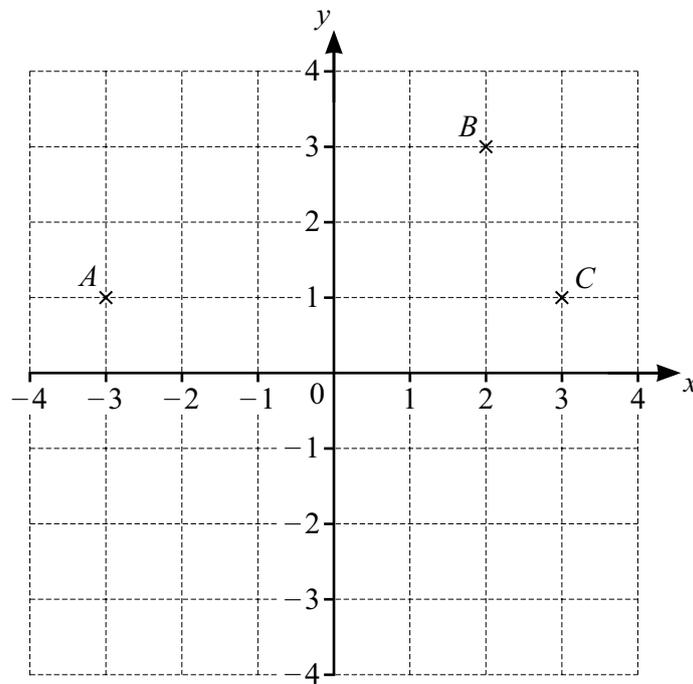
[2]

- 5 A bag contains red, blue and orange counters.  
 30% of the counters are red.  
 Half of the counters are blue.  
 16 counters are orange.

Find the number of red counters in the bag.

..... [2]

6



Points  $A$ ,  $B$  and  $C$  are shown on the grid.

- (a) Write down the coordinates of point  $C$ .

(....., .....) [1]

- (b) On the grid, plot point  $D$  so that  $ABCD$  is a parallelogram.

[1]

- 7 (a) 20 students from College A each run 5 km.  
The times, correct to the nearest minute, are recorded.

32    51    25    40    47    21    37    32    48    36  
46    39    30    29    44    39    53    35    40    31

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

2	
3	
4	
5	

Key: 3|4 represents 34 minutes

[2]

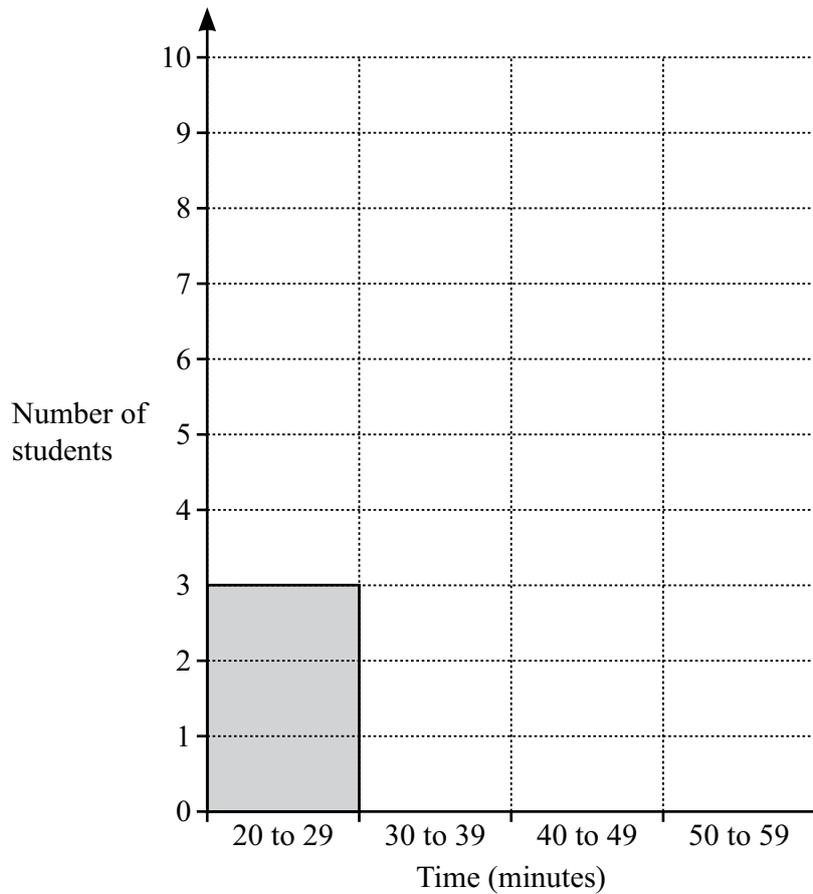
- (ii) Find the range of the times.

..... min [1]

- (iii) Find the median of the times.

..... min [1]

(iv) Complete the bar chart for the times of the students.



[2]

(b) 20 students from College B each run 5 km.

Their times, correct to the nearest minute, are recorded and the results are shown in the table.

Time (minutes)	Number of students
30 to 39	5
40 to 49	8
50 to 59	7

Write down two comments comparing the times of students from College A with the times of students from College B.

1.....

.....

2.....

.....

[2]

8 A cube has a surface area of  $96 \text{ cm}^2$ .

Find the volume of the cube.

.....  $\text{cm}^3$  [4]

9 Write down

(a) a square number greater than 10

..... [1]

(b) an irrational number

..... [1]

(c) a cube number between 50 and 100

..... [1]

(d) the highest common factor (HCF) of 24 and 40.

..... [1]

10 A solid metal cone with a height of 6 cm has a volume of  $200\pi \text{ cm}^3$ .

(a) Find the radius of the cone.

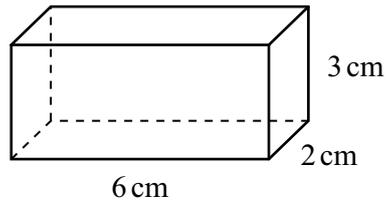
..... cm [2]

(b) The cone is melted down and made into 20 identical solid cylinders each of radius 2 cm.

Find the height of each cylinder.

..... cm [2]

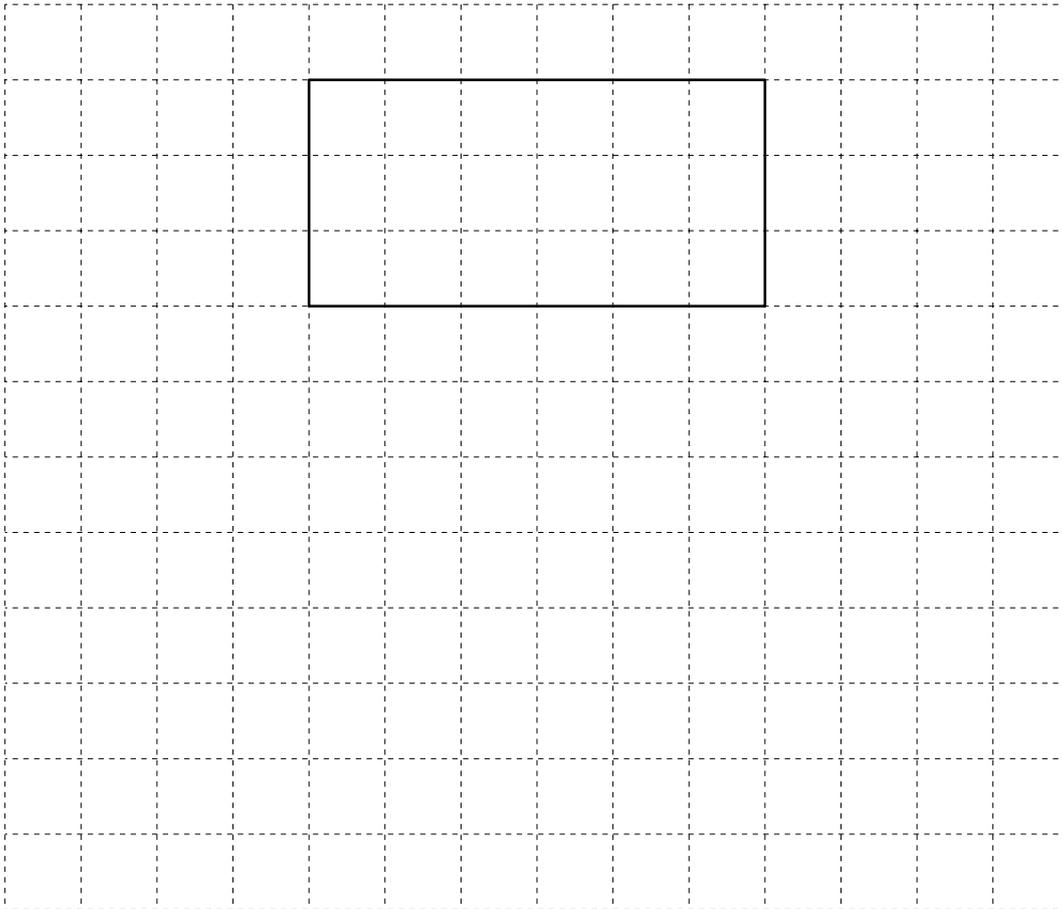
11



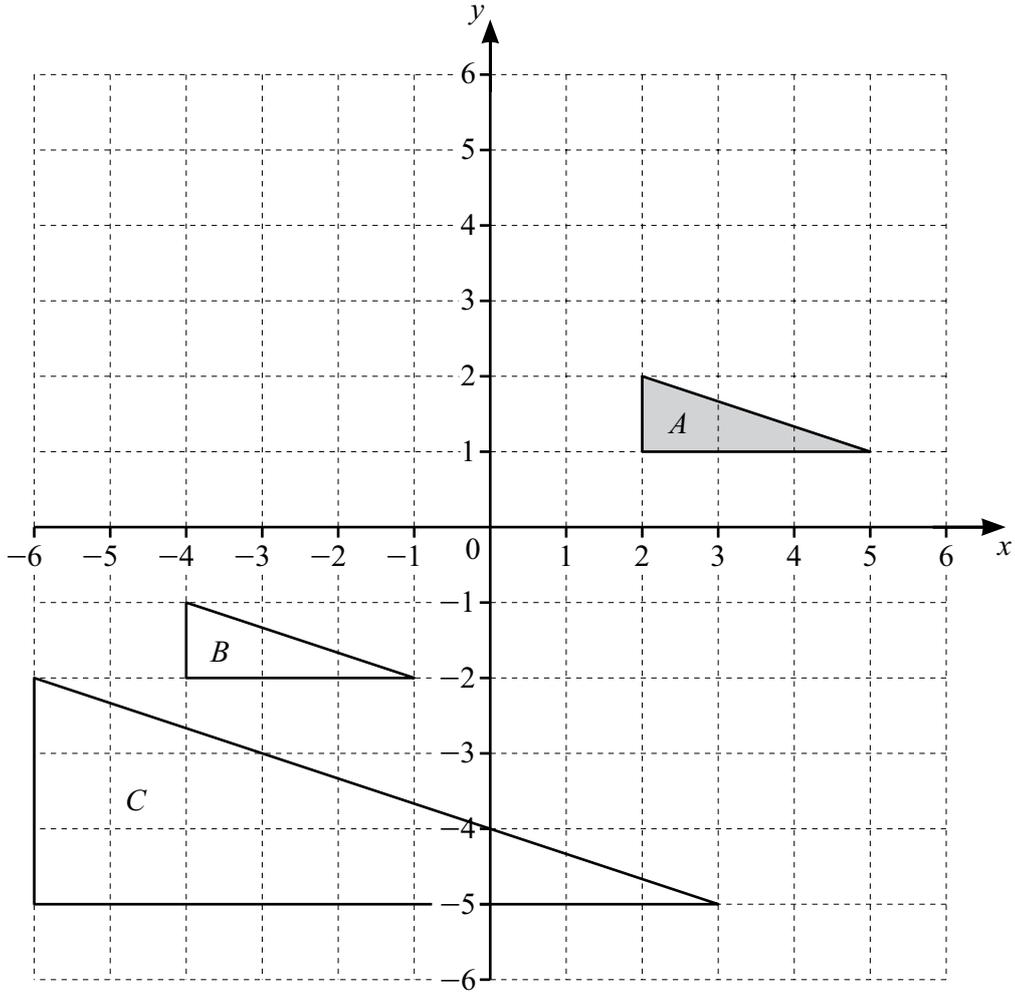
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The diagram shows a cuboid.

On the  $1\text{ cm}^2$  grid, complete the net of the cuboid.  
One face has been drawn for you.



[3]



(a) Describe fully the **single** transformation that maps

(i) triangle *A* onto triangle *B*

.....  
 ..... [2]

(ii) triangle *A* onto triangle *C*.

.....  
 ..... [3]

(b) On the grid, draw the image of triangle *A* after a reflection in the line  $y = -1$ . [2]

13 (a)  $T = 3a^2b$

Find the value of  $T$  when  $a = 4$  and  $b = 5$ .

$T = \dots\dots\dots$  [2]

(b) (i) Expand.

$x(3y - 5x)$

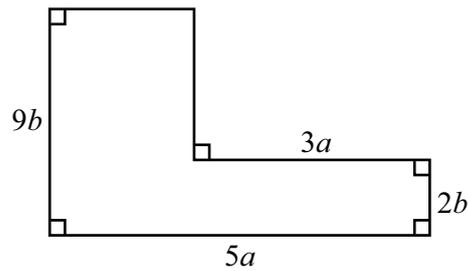
$\dots\dots\dots$  [2]

(ii) Factorise.

$5x - 20x^2$

$\dots\dots\dots$  [2]

(c)

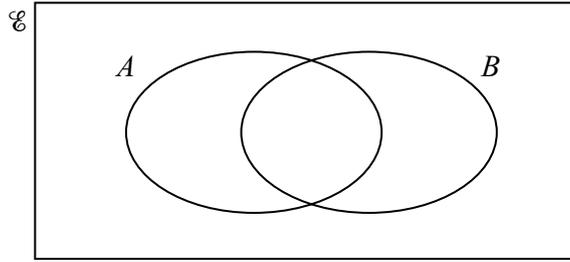


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Find an expression for the total area of this shape.  
Give your answer in its simplest form.

$\dots\dots\dots$  [3]

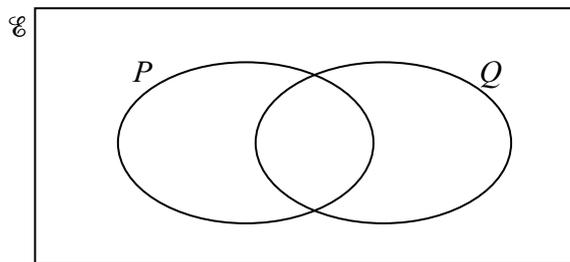
14 (a)



On the Venn diagram, shade the region  $A \cap B$ .

[1]

- (b)  $U = \{1, 2, 3, 4, 5, 6\}$   
 $P = \{x : x \text{ is an even number}\}$   
 $Q = \{x : x \text{ is a prime number}\}$



(i) Complete the Venn diagram.

[2]

(ii) Find  $n(P)$ .

..... [1]

15 Work out  $2\frac{1}{5} \times 3\frac{3}{4}$ .

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

..... [3]

16 (a) Write 45 000 in standard form.

..... [1]

(b) Write  $2.06 \times 10^{-2}$  as an ordinary number.

..... [1]

17 Simplify.

$$8t^8 \div 4t^4$$

..... [2]

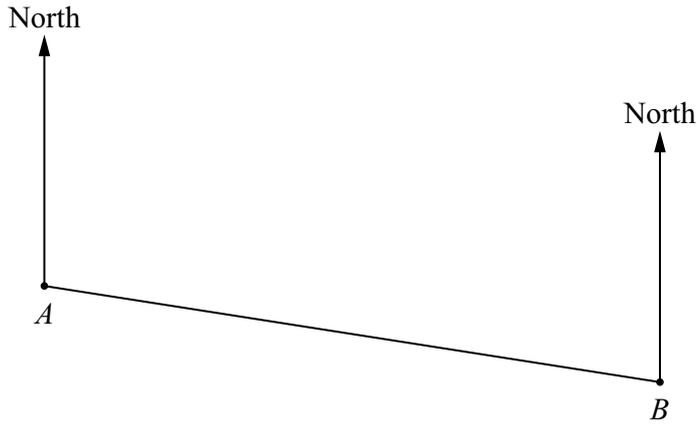
18 (a) Write 48 as a product of its prime factors.

..... [2]

(b) Find the lowest common multiple (LCM) of 48 and 60.

..... [2]

19



NOT TO  
SCALE

The bearing of  $B$  from  $A$  is  $105^\circ$ .

Find the bearing of  $A$  from  $B$ .

..... [2]

20 The height,  $h$  metres, of a tower is 76.3 m, correct to 1 decimal place.

Complete this statement about the value of  $h$ .

.....  $\leq h <$  ..... [2]

21 Solve these equations.

(a)  $5x = -30$

$x = \dots\dots\dots$  [1]

(b)  $4x - 2 = 28$

$x = \dots\dots\dots$  [2]

(c)  $\frac{2x+7}{3} = 11$

$x = \dots\dots\dots$  [2]

- 22 Solve the simultaneous equations.  
You must show all your working.

$$\begin{aligned}5x - 2y &= 17 \\ 2x + 3y &= 3\end{aligned}$$

$x = \dots\dots\dots$

$y = \dots\dots\dots$

[4]

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