GradeMax

Cambridge Assessment International Education

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4944495274 8

MATHEMATICS **0580/12**

Paper 1 (Core) **October/November 2022**

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.

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[Turn over

1 **(a)** Write the number eighty thousand and eighty in figures.

..... [1]

(b) Write down the value of the 4 in the number 643 719.

..... [1]

2 Find the value of $\sqrt{53.29}$.

..... [1]

3 A football team has 16 players at a training session.
Kim records the colour of each of their shirts.

Blue	Silver	Green	Green	Silver	Silver	Red	Silver
Green	Red	Silver	Silver	Blue	Green	White	Blue

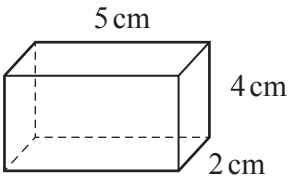
Complete the frequency table.
You may use the tally column to help you.

Colour	Tally	Frequency
Blue		
Green		
Red		
Silver		
White		

[2]

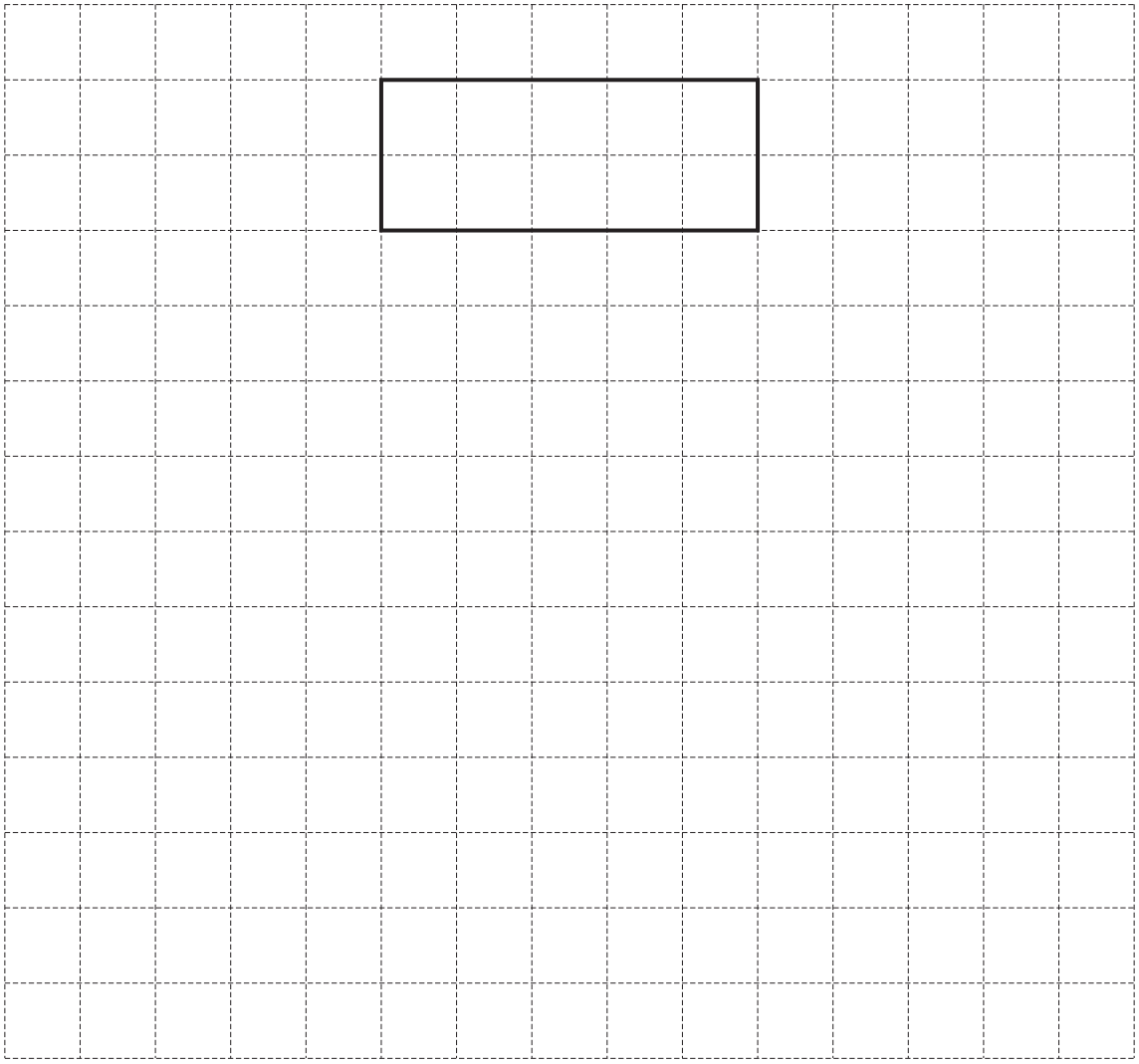
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4



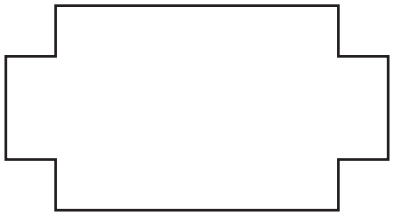
NOT TO SCALE

Complete the net of this cuboid on the 1 cm^2 grid.
One face has been drawn for you.



[3]

5



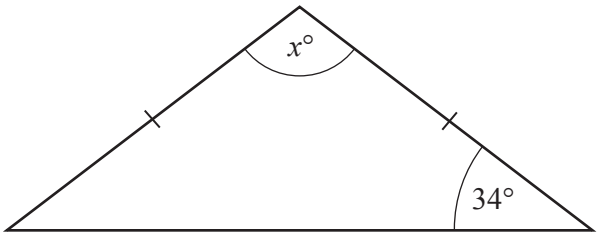
Draw all the lines of symmetry on this shape. [2]

6 Put one pair of brackets in each statement to make it correct.

(a) 10 − 4 ÷ 2 + 18 = 21 [1]

(b) 7 × 3 + 1 + 2 = 30 [1]

7



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The diagram shows an isosceles triangle.

Find the value of x.

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

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8 **(a)** Simplify.

$$6a+3b-2a-5b$$

..... [2]

(b) $s = 5t+\frac{1}{2}at^2$

Find the value of s when $t = 6$ and $a = 3$.

$s =$ ..... [2]

9 Work out.

(a) $\begin{pmatrix} 6 \\ -3 \end{pmatrix}+\begin{pmatrix} 4 \\ -5 \end{pmatrix}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $6\begin{pmatrix} 3 \\ -2 \end{pmatrix}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

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10 **Without using a calculator**, work out $\frac{5}{9} - \frac{1}{6}$.

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

..... [2]

11 A 4-faced dice is numbered 1 to 4.
The table shows some of the probabilities of scoring each number.

Number	1	2	3	4
Probability	0.17		0.28	0.31

Complete the table.

[2]

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12 **(a)** These are the first five terms of a sequence.

27 26 23 18 11

Find the next two terms in the sequence.

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

(b) These are the first five terms of a different sequence.

3 10 17 24 31

Find the nth term.

..... [2]

13 Daryl records the number of hours in a week 8 people spend exercising.

5 2 1.5 3 18 4.5 2 4

(a) Find the median.

..... h [2]

(b) Explain why the mean may not be a suitable average to use.

..... [1]

14 Calculate.

(a) 2000×1.2^3

..... [1]

(b) $2\frac{1}{8} \times \frac{6}{17}$

..... [1]

(c) $\frac{4.5(\cos 30°)}{\sqrt{3}} - 2$

..... [1]

15 Jenna buys 2.4 m of ribbon and 4.8 m of fabric.
The total cost is \$33.48 .
Ribbon costs \$0.85 per metre.

Find the cost of 1 m of fabric.

\$ ..... [3]

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16 **(a)** Expand.

$x(x+8)$

..... [2]

(b) Factorise completely.

$6a-3ab$

..... [2]

(c) Solve.

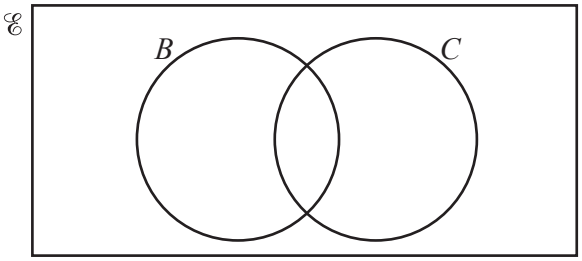
$5x-6=x+3$

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

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17 **(a)** $\mathscr{E}$ = { people in a group}
B = { people who own a bicycle}
C = { people who own a car}

There are 120 people in the group.
21 people own a bicycle.
15 people own both a bicycle and a car.
35 people do not own a bicycle and do not own a car.



(i) Complete the Venn diagram.

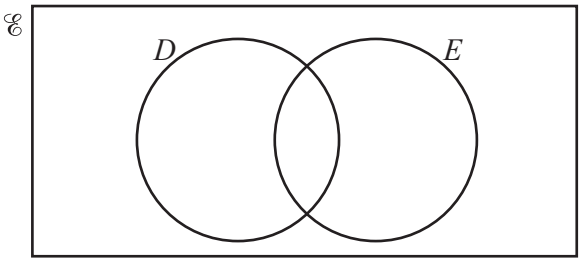
[2]

(ii) A person from the group is chosen at random.

Find the probability that this person owns a car.

..... [1]

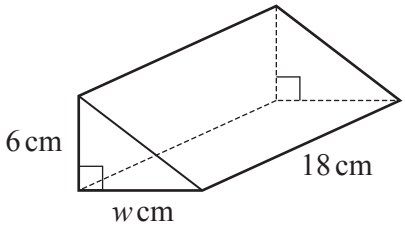
(b)



Shade the region $D \cup E$. [1]

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The right-angled triangular prism has height 6 cm, width w cm and length 18 cm.
The volume of the prism is 810 cm^3.

Find the value of w.

$w =$ ..... [3]

19 In a survey of 1200 people, 150 people are left-handed.

Work out the expected number of left-handed people in a town with 56 000 people.

..... [2]

Questions 20 and 21 are printed on the next page.

20 **(a)** $5^8 \div 5^x = 5^2$

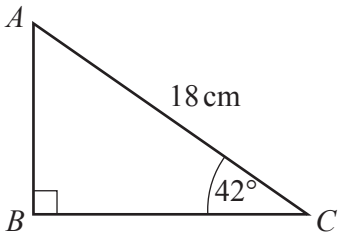
Find the value of x.

$x =$ ..... [1]

(b) Simplify $(x^5)^3$.

..... [1]

21



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ABC is a right-angled triangle.

Calculate BC.

$BC =$ ..... cm [2]

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