



# Cambridge IGCSE™

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/22**

Paper 2 (Extended)

**May/June 2021**

**45 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 and you will be given marks for correct methods even if your answer is incorrect.
- All answers should be given in their simplest form.

## INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **8** pages.



## Formula List

For the equation  $ax^2 + bx + c = 0$   $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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  $l$ .  $A = \pi rl$

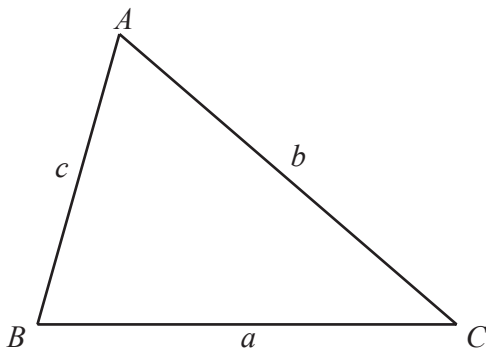
Curved surface area,  $A$ , of sphere of radius  $r$ .  $A = 4\pi r^2$

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  $r$ .  $V = \frac{4}{3}\pi r^3$



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$\text{Area} = \frac{1}{2}bc \sin A$$

3

Answer **all** the questions.

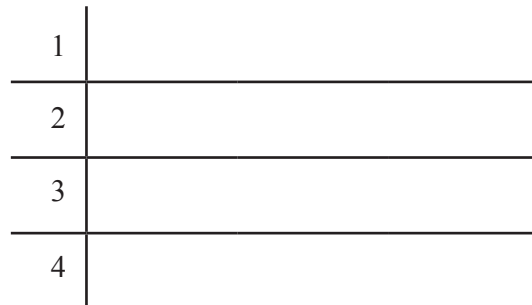
1 Work out  $\frac{3.6}{0.004}$ .

..... [1]

2 These are the masses, in kilograms, of 16 newborn babies.

2.5    3.2    3.8    3.2    1.9    3.4    1.7    4.1  
 3.0    2.8    4.0    2.7    3.9    2.7    4.1    3.7

Complete the ordered stem-and-leaf diagram for the masses.



Key: 3 | 2 = 3.2

[2]

3 Work out  $2\frac{1}{2} \div 3\frac{1}{4}$ .

Give your answer as a fraction in its simplest form.

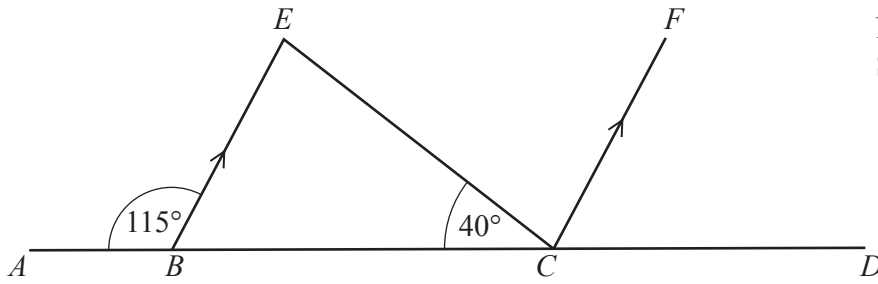
..... [3]

4 Insert **two** pairs of brackets to make this statement correct.

$$3 \times 7 - 3 + 4 \times 2 = 32$$

[1]

5



NOT TO SCALE

$ABCD$  is a straight line and  $BE$  is parallel to  $CF$ .

Find angle  $ECF$ .

Angle  $ECF = \dots\dots\dots$  [2]

6 (a) Factorise  $a^2 - b^2$ .

$\dots\dots\dots$  [1]

(b) Work out  $5.37^2 - 4.63^2$ .

$\dots\dots\dots$  [2]

7 Solve  $2x + 3 < 5x - 12$ .

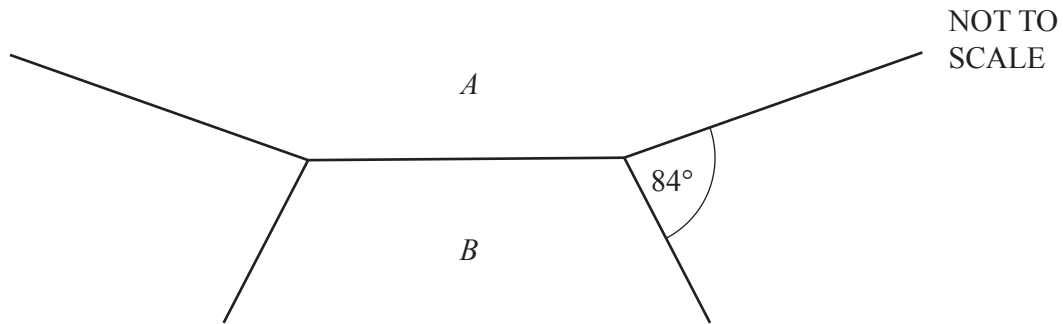
$\dots\dots\dots$  [2]

8 Expand and simplify  $(2\sqrt{3} - 5)(4 + \sqrt{3})$ .

$\dots\dots\dots$  [2]

5

9



The diagram shows part of polygon  $A$  and part of polygon  $B$ .

$A$  is a regular polygon with  $n$  sides.

$B$  is a regular hexagon.

Find the value of  $n$ .

$$n = \dots\dots\dots [3]$$

**10**      $c = 4 \times 10^7$       $d = 5.8 \times 10^6$

Work out, giving your answers in standard form,

**(a)**  $c^2$ ,

$$\dots\dots\dots [2]$$

**(b)**  $c - d$ .

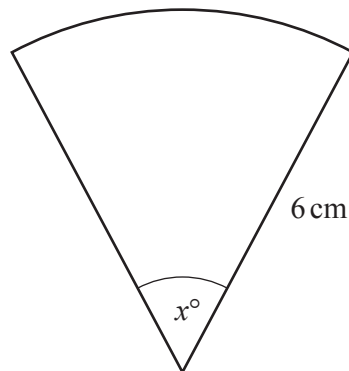
$$\dots\dots\dots [2]$$

11  $y = \frac{2}{x+3}$

Rearrange the formula to make  $x$  the subject.

$x = \dots\dots\dots$  [3]

12



NOT TO  
SCALE

The area of this sector is  $5\pi \text{ cm}^2$ .

Find the value of  $x$ .

$x = \dots\dots\dots$  [3]

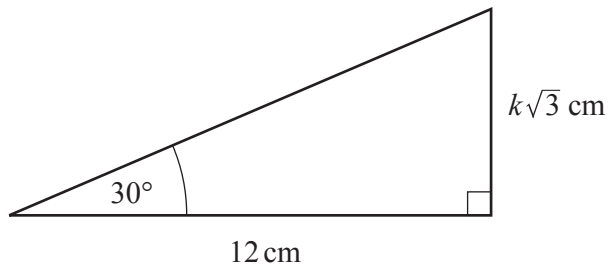
- 13 The heights,  $h$  cm, of 100 plants are measured.  
The table shows the results.

Height, $h$ cm	Frequency
$0 < h \leq 40$	15
$40 < h \leq 80$	40
$80 < h \leq 120$	45

Calculate an estimate for the mean height of the plants.

..... cm [3]

14



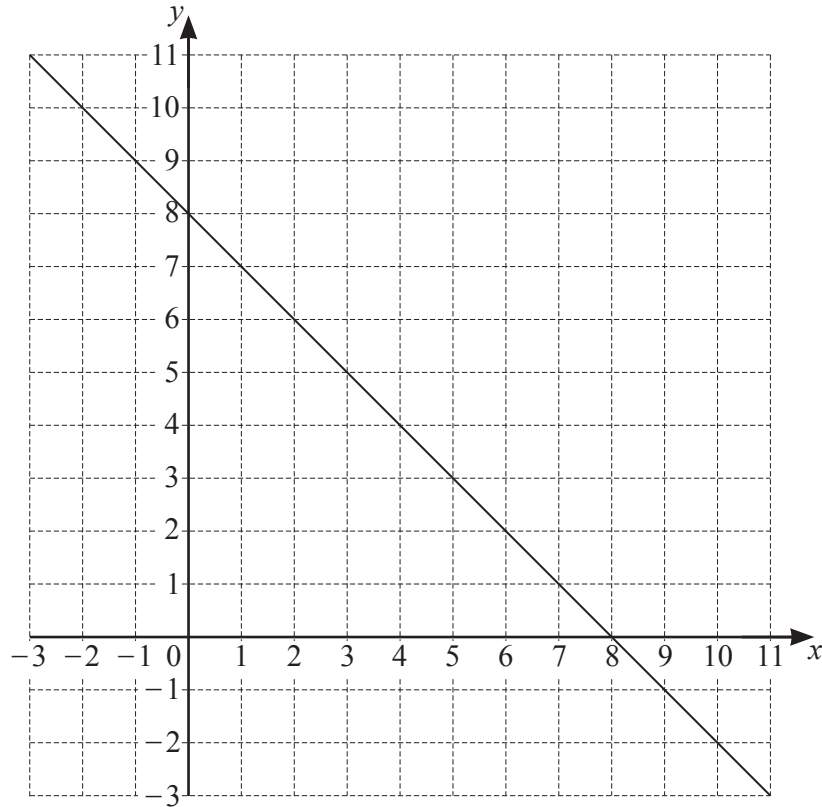
NOT TO  
SCALE

Find the value of  $k$ .

$k =$  ..... [3]

**Questions 15 and 16 are printed on the next page.**

15



The diagram shows the line  $x + y = 8$ .

On the diagram, show clearly the region defined by these inequalities.

$$x + y \leq 8$$

$$x \geq 2$$

$$y \leq 3$$

[2]

16 Simplify  $\frac{x^2y - 3xy}{x^2 - 2x - 3}$ .

..... [3]

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