Cambridge Assessment International Education

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2585309447

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.

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Formula List

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

Curved surface area, A, of cylinder of radius r, height h. $\quad A = 2\pi rh$

Curved surface area, A, of cone of radius r, sloping edge l. $\quad A = \pi rl$

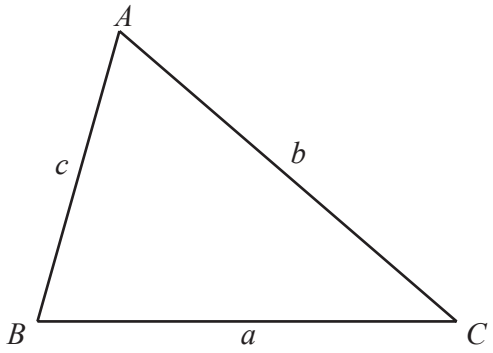
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

Volume, V, of pyramid, base area A, height h. $\quad V = \frac{1}{3}Ah$

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

Volume, V, of cone of radius r, height h. $\quad V = \frac{1}{3}\pi r^2 h$

Volume, V, of sphere of radius r. $\quad V = \frac{4}{3}\pi r^3$



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

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

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

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.

1	
2	
3	
4	

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.

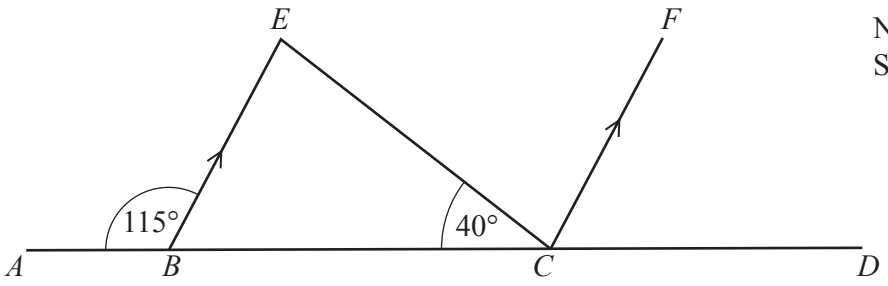
..... [3]

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

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

[1]

5



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

Find angle *ECF*.

Angle *ECF* = ... [2]

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

..... [1]

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

..... [2]

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

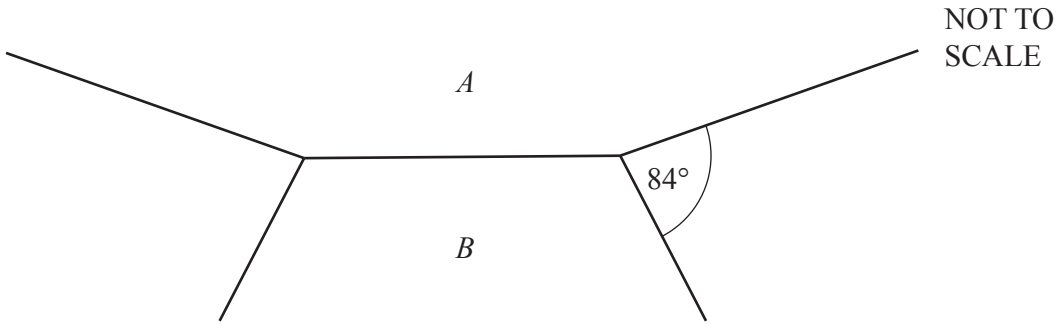
..... [2]

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

..... [2]

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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.

$n =$ ..... [3]

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

Work out, giving your answers in standard form,

(a) c^2 ,

..... [2]

(b) $c - d$.

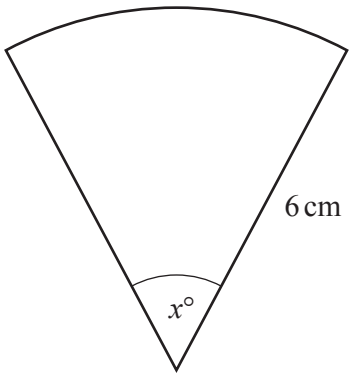
..... [2]

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

Rearrange the formula to make x the subject.

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

12



NOT TO SCALE

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

Find the value of x.

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

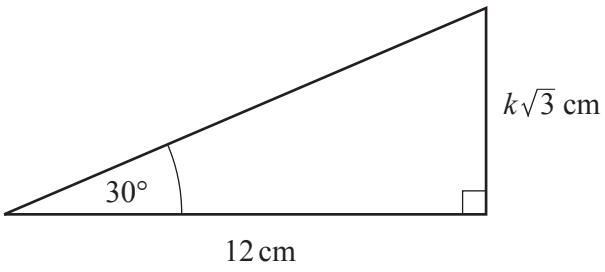
13 The heights, h cm, of 100 plants are measured.
The table shows the results.

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

Calculate an estimate for the mean height of the plants.

..... cm [3]

14



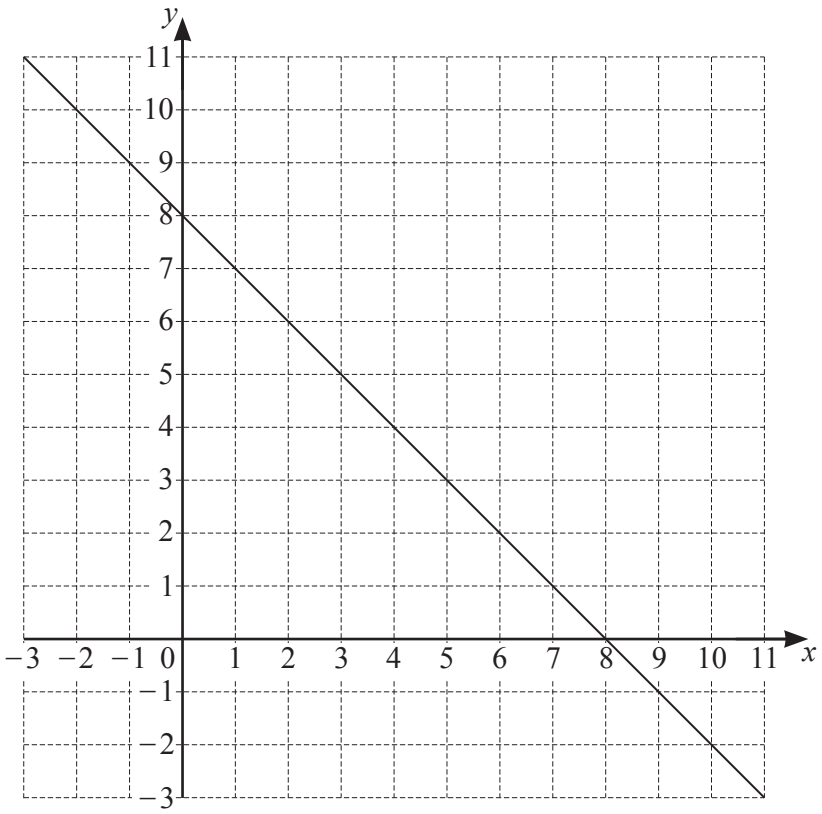
NOT TO SCALE

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.

$$x+y \leqslant 8 \qquad x \geqslant 2 \qquad y \leqslant 3$$

[2]

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

..... [3]

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