Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

3757916466

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

Paper 2 (Extended) **May/June 2018**

45 minutes

Candidates answer on the Question Paper.

Additional Materials: Geometrical Instruments

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
Do not use staples, paper clips, glue or correction fluid.
You may use an HB pencil for any diagrams or graphs.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** the questions.
CALCULATORS MUST NOT BE USED IN THIS PAPER.
All answers should be given in their simplest form.
You must show all the relevant working to gain full marks and you will be given marks for correct methods even if your answer is incorrect.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total number of marks for this paper is 40.

This document consists of **8** printed pages.

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[Turn over

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. $\quad A = \pi rl$

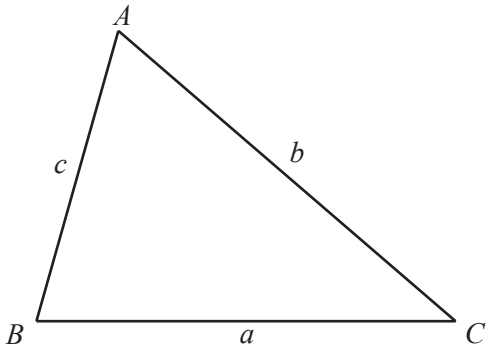
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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



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

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

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

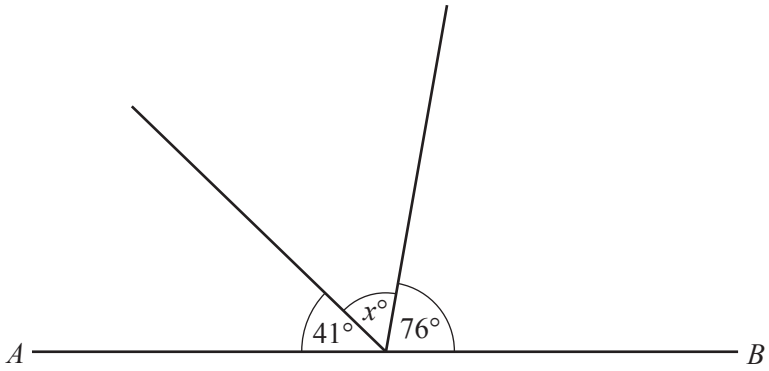
Answer **all** the questions.

1 A quadrilateral has exactly one pair of parallel sides.

Write down the mathematical name for this quadrilateral.

..... [1]

2



AB is a straight line.

Find the value of x.

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

3 A bag contains 2 blue balls, 3 red balls and 5 green balls only.
One ball is chosen at random.

Find the probability that this ball is red.

..... [1]

4 Write down a prime number between 60 and 70.

..... [1]

5 Solve.

$$7x + 9 = 5x + 17$$

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

6 Write 36 as a product of prime factors.

..... [2]

7 Solve.

$$3x + 7 < 1$$

..... [2]

8 Point A has co-ordinates (2, 12). Point B has co-ordinates (4, 2).

Find the co-ordinates of the midpoint of AB.

(..... , ...) [2]

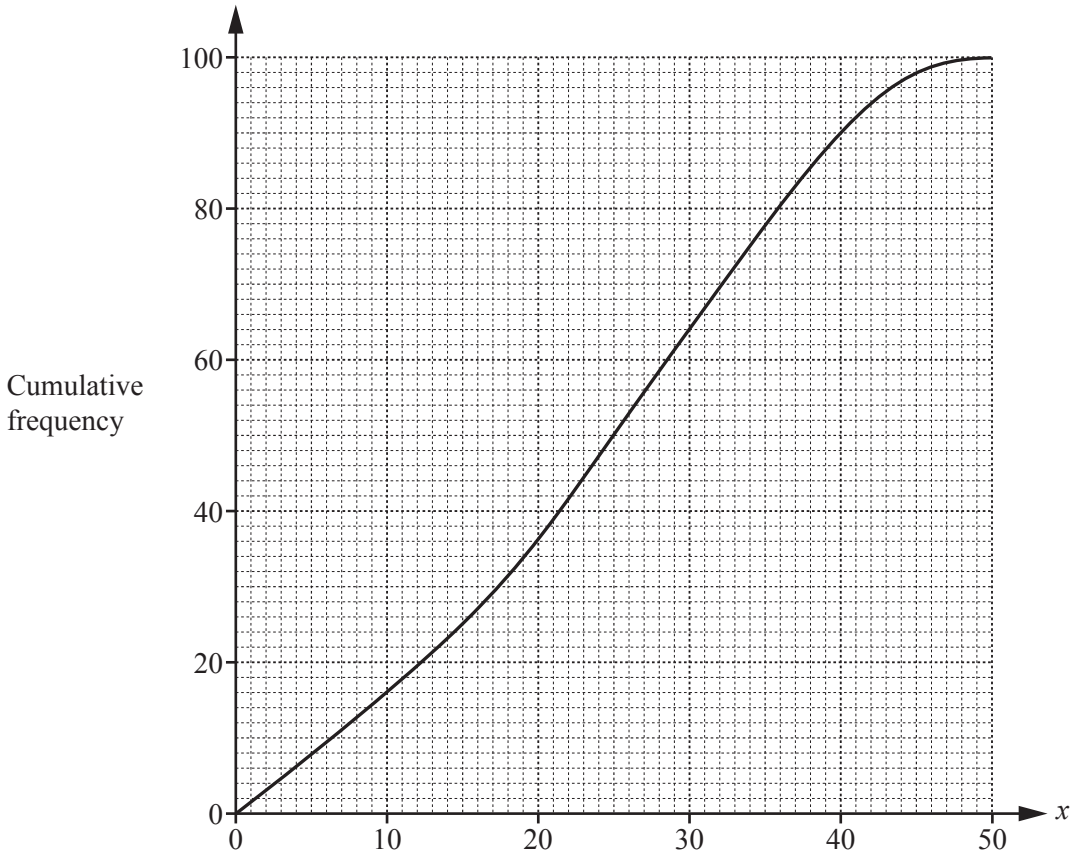
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9 Work out.

$$4\frac{2}{5} - 1\frac{2}{3}$$

..... [3]

10



Use the cumulative frequency curve to estimate the inter-quartile range.

..... [2]

11 Here are the first four terms of a sequence.

13 9 5 1

(a) Write down the next term.

..... [1]

(b) Find an expression, in terms of n, for the nth term.

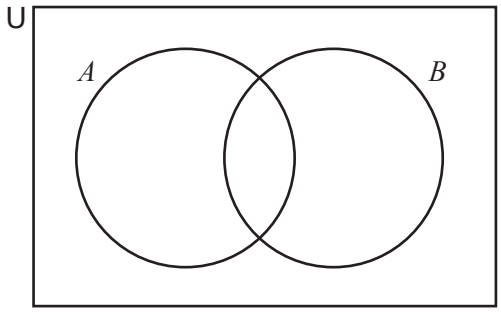
..... [2]

12 Simplify.

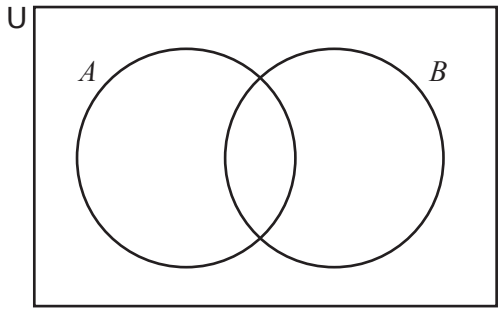
$\sqrt{75} - \sqrt{12} + \sqrt{27}$

..... [2]

13 Shade the given sets in each of these diagrams.



$A' \cap B$



$(A' \cup B')'$

[2]

14 Point A has co-ordinates (2, 3). Point B has co-ordinates (4, 11).

Find the equation of the line AB.
Give your answer in the form $y = mx + c$.

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

15 Expand the brackets and simplify.

$$(3x - 5y)(5x - 3y)$$

..... [3]

16 A factory makes soft centre chocolates and hard centre chocolates only.
The probability that a chocolate chosen at random has a hard centre is 0.6 .
Three chocolates are chosen at random.

Find the probability they are all soft centre chocolates.

..... [3]

Questions 17 and 18 are printed on the next page.

17 Factorise.

$$4x^2 - 4xy - 3y^2$$

..... [3]

18 Write as a single fraction in its simplest form.

$$\frac{n+1}{n-1} - \frac{n-1}{n+1}$$

..... [4]

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