Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

1387440217

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

Paper 2 (Extended) **May/June 2017**

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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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. $\quad A = \pi rl$

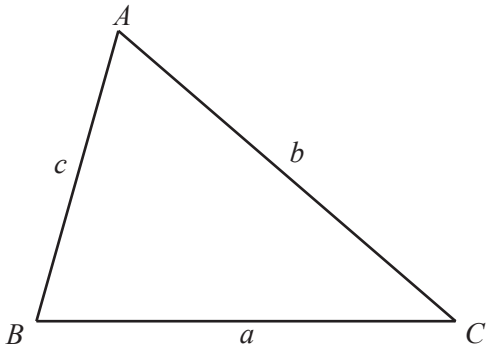
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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)** Write 5.309 87 correct to 3 decimal places.

..... [1]

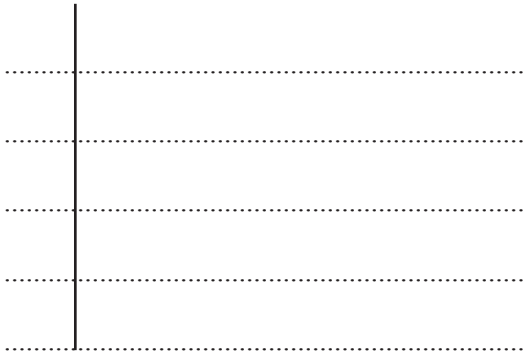
(b) Write 0.003 648 9 correct to 3 significant figures.

..... [1]

2 These are the number of points *The Storm* have scored in their last 20 basketball matches.

28	33	49	37	26
54	46	48	53	34
26	17	46	41	52
48	37	30	45	53

(a) Construct an ordered stem and leaf diagram to show these scores and complete the key.



Key ..... | ..... = 53 [3]

(b) Find the median score.

..... [1]

3 Factorise completely.

$6x^2 - 2x$

..... [2]

4



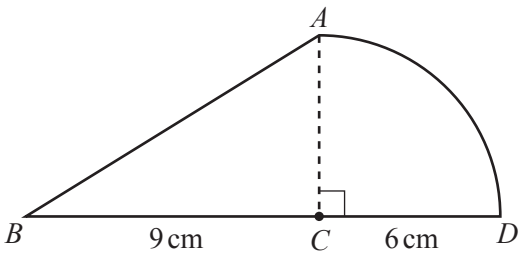
Complete this statement for the parallelogram shown.

This shape has ..... lines of symmetry and rotational symmetry of order ..... . [2]

5 Simplify $4(2x-1)-3(x-2)$.

..... [2]

6



NOT TO SCALE

AD is an arc of a circle, centre C, and BCD is a straight line.
$BC = 9\,\text{cm}$, $CD = 6\,\text{cm}$ and angle $ACD = 90°$.

Find the total area of the shape $ABCD$.
Give your answer in terms of π.

..... cm^2 [3]

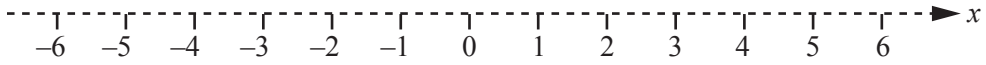
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7 $3x + 2 \geqslant 5x - 6$

(a) Solve the inequality.

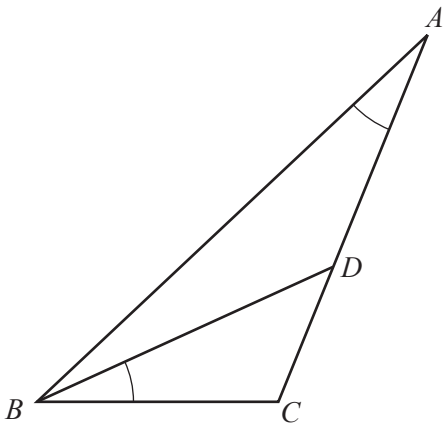
..... [2]

(b) Show your solution to **part (a)** on this number line.



[1]

8



NOT TO SCALE

ADC is a straight line and angle BAC = angle DBC.

(a) Complete the following statement.

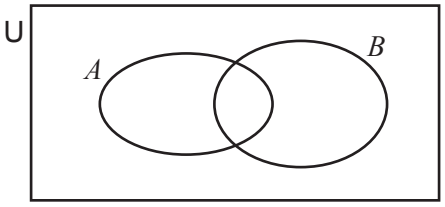
Triangle ACB is similar to triangle ..... . [1]

(b) $BC = 6$ cm and $CD = 4$ cm.

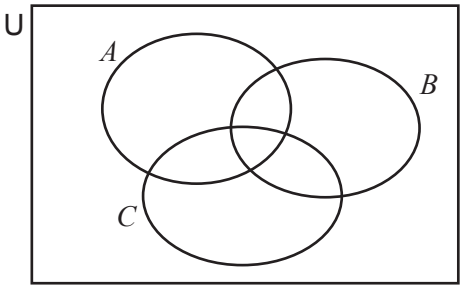
Calculate the length AC.

$AC =$ ..... cm [2]

9 **(a)** In each diagram, shade the region indicated.

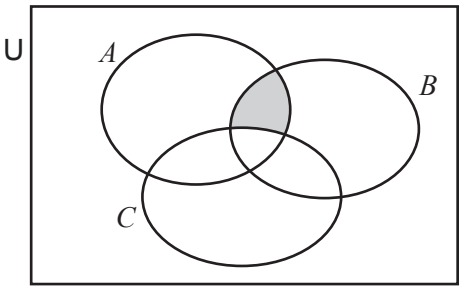


$A \cap B'$



$(A \cup C) \cap B'$ [2]

(b) Use set notation to describe the shaded region.



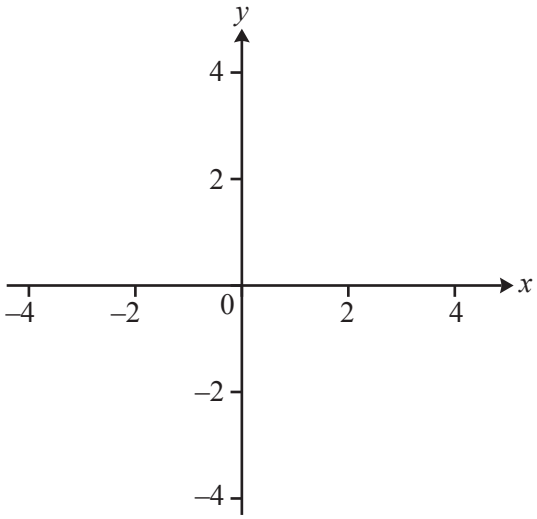
..... [1]

10 Expand the brackets and simplify.

$$(2x-3y)(3x-4y)$$

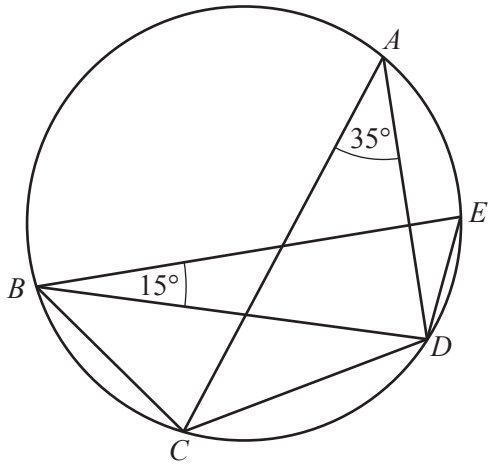
..... [3]

11 Sketch the graph of $y = |x+2|$.



[3]

12



NOT TO SCALE

A, B, C, D and E are points on the circle.
Angle $CAD = 35°$ and angle $EBD = 15°$.

Find

(a) angle CBD,

Angle $CBD =$ ..... [1]

(b) angle CDE.

Angle $CDE =$ ..... [1]

13 $p = 5 + 2\sqrt{3}$ $q = 5 - 2\sqrt{3}$

Find $p^2 - q^2$, writing your answer in its simplest form.

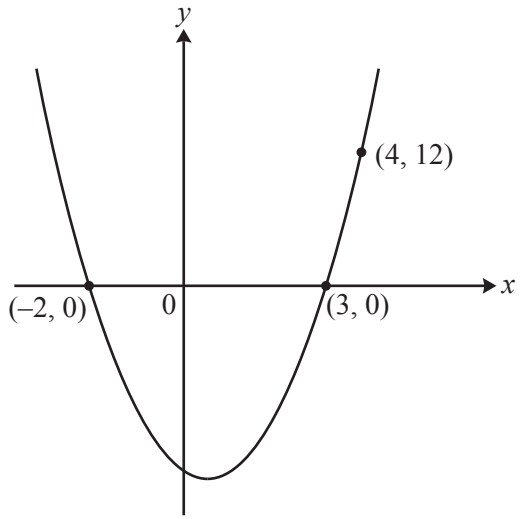
..... [3]

14 Find the value of x when $5\log 2 - \log 8 = \log x$.

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

Question 15 is printed on the next page.

15



NOT TO SCALE

The equation of this curve is $y = ax^2 + bx + c$.
Find the values of a, b and c.

$a =$ .....

$b =$ .....

$c =$ ..... [3]

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