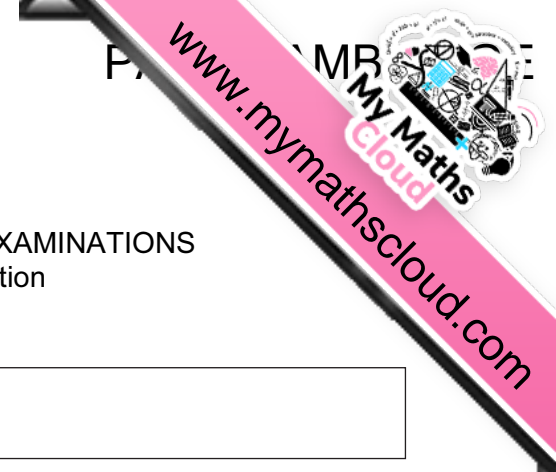UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/01**

Paper 1 (Core) **October/November 2013**

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, highlighters, glue or correction fluid.

You may use a 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 **11** printed pages and **1** blank page.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

Formula List

Area, A, of triangle, base b, height h.	$A = \dfrac{1}{2}bh$
Area, A, of circle, radius r.	$A = \pi r^2$
Circumference, C, of circle, radius r.	$C = 2\pi r$
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 prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \dfrac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \dfrac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \dfrac{4}{3}\pi r^3$

1 Write 8572

    (a) correct to the nearest 10 ,

                  Answer (a) .... [1]

    (b) correct to the nearest 100 .

                  Answer (b) .... [1]

---

2 Put one of $+ \quad - \quad \times \quad \div$ in the box to make the following correct.

$$3 \times (11 \boxed{} 5) = 18$$

                                                       [1]

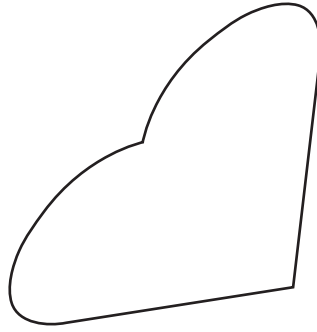---

3 Write the following in order, starting with the smallest.

$$2^5 \qquad\qquad 5^2 \qquad\qquad 3^3$$

                Answer .... < .... < .... [2]

                                     [Turn over

4

On the shape draw the line of symmetry. [1]

___

5 **(a)** Work out $\frac{3}{4}$ of $120 .

Answer (a) $ .... [1]

(b) A sum of money is divided between Stefan and Tomas in the ratio

Stefan : Tomas = 1 : 3.

(i) What **fraction** of the money does Stefan receive?

Answer (b)(i) .... [1]

(ii) What **percentage** of the money does Tomas receive?

Answer (b)(ii) .... % [1]

___

6 **(a)** Jean plays golf. Here are her best 10 scores.

69   71   68   70   71   66   71   72   69   70

(i) What is the range of her scores?

Answer (a)(i) .... [1]

(ii) Find Jean's modal score.

Answer (a)(ii) .... [1]

(b) Anya records the shoe size of 10 of her friends.
This frequency table shows her results.

Shoe size	Frequency
3	4
4	2
5	3
6	1

Find the mean shoe size.

Answer (b) .... [3]

[Turn over

7 In the diagram *BE* is the diameter of the circle and *AC* is a tangent to the circle at *B*.
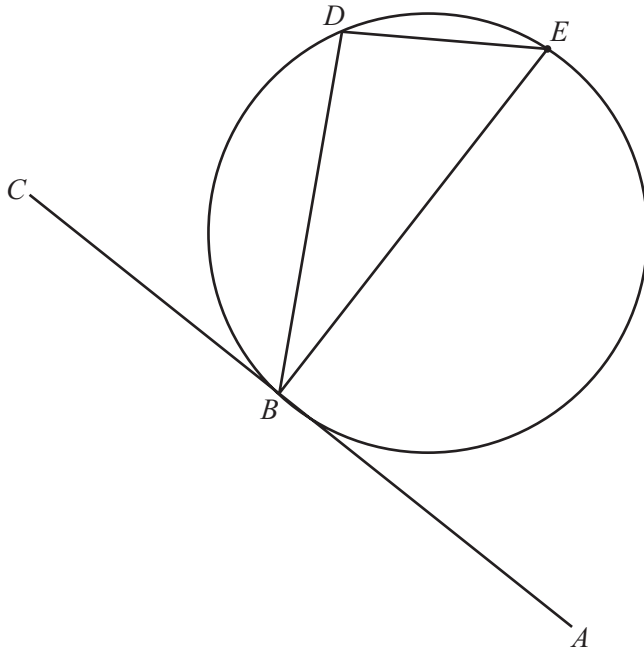
NOT TO SCALE

(a) Write down the size of angle *BDE*.

Answer (a) .... [1]

(b) Write down the size of angle *CBE*.

Answer (b) .... [1]

(c) Which word is the mathematical name for the line *DE*?

diameter   radius   sector

chord   circumference   centre

Answer (c) .... [1]

8 **(a)** The diagram shows the graph of $y = \dfrac{1}{x}$.
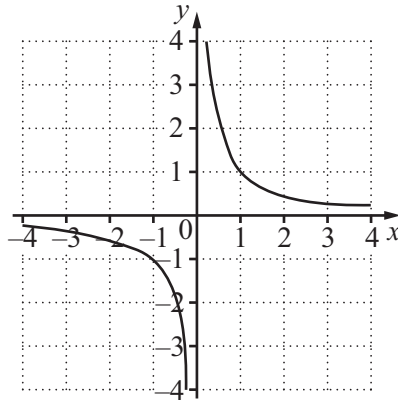
Write down the equations of the two asymptotes of the graph of $y = \dfrac{1}{x}$.

Answer (a) ....

.... [2]

(b) The diagram shows the graph of $y = f(x)$.
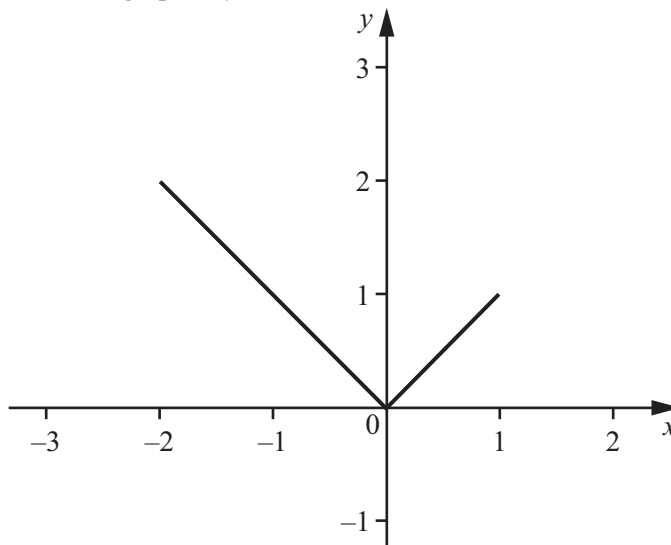
(i) Write down the domain.

Answer (b)(i) .... [1]

(ii) Write down the range.

Answer (b)(ii) .... [1]

(iii) On the diagram, sketch the graph of $y = f(x) + 1$. [1]

[Turn over

9   Jimmi's pencil case only contains 3 pens and 12 pencils.

   (a)   He chooses an object at random from his pencil case.

          Find the probability that the object is a pencil.

          Answer (a) .... [1]

   (b)   Jimmi chooses an object at random from his pencil case and then replaces it.
          He repeats this 100 times.

          How many times do you expect Jimmi to choose a **pen**?

          Answer (b) .... [2]

10 **(a)** Solve the following equations.

(i) $6 + 5w = 41$

Answer (a)(i) $w =$ .... [2]

(ii) $7(3x - 4) = 35$

Answer (a)(ii) $x =$ .... [3]

(b) Write down **two** integers which satisfy the inequality $4a - 1 < 10$.

Answer (b) .... [2]

[Turn over

11 *A* is the point (2, –1) and *B* is the point (4, 5).
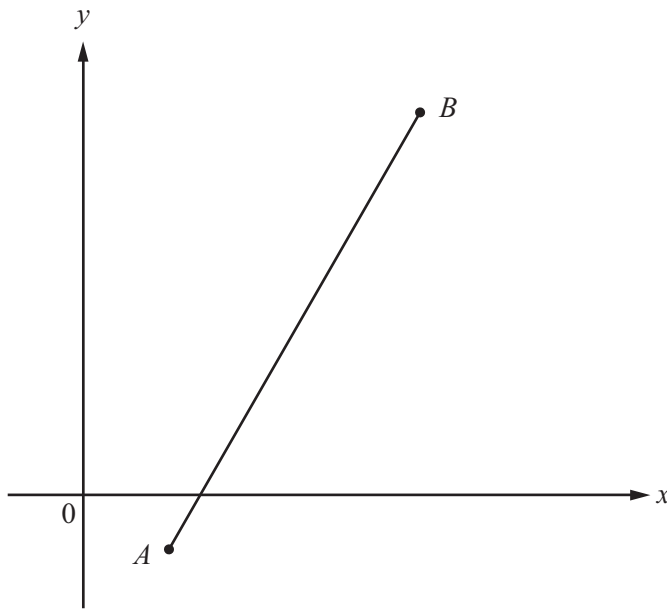
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(a) Find the co-ordinates of the midpoint of *AB*.

Answer (a) (........................ , ...) **[1]**

(b) **(i)** Find the gradient of *AB*.

Answer (b)(i) .... **[2]**

(ii) Find the equation of the line *AB*.

Answer (b)(ii) .... **[2]**

(c) Write down the equation of a line parallel to *AB*.

Answer (c) .... **[1]**

12

9 mm

15 mm

12 mm

x

y

NOT TO SCALE

Write down

(a) tan *x*,

Answer (a) .... [1]

(b) cos *y*.

Answer (b) .... [1]

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