Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/12**

Paper 1 (Core) **October/November 2015**

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.

Formula List

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
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.	$V = \frac{1}{3}Ah$
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.	$V = \frac{4}{3}\pi r^3$

Answer **all** the questions.

1 Work out.

$5 \times 20 \div 4$

Answer ..... [1]

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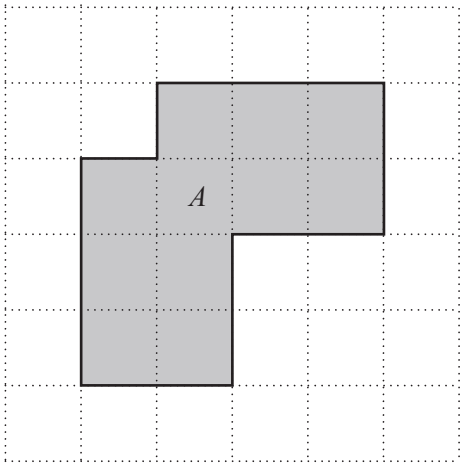
2 **(a)**

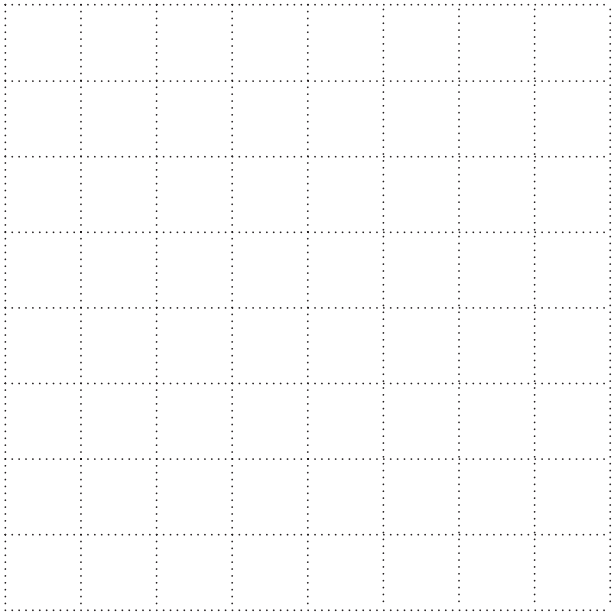


Shape *A* is drawn on a 1cm square grid.

Find the **perimeter** of shape *A*.

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

(b) On the grid below, draw a different shape which has the same **area** as shape *A*.



[2]

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3 **(a)** Write down the value of $(-2)^3$.

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

(b) Simplify.

$$\frac{-2-(-8)}{2+8}$$

Give your answer as a fraction in its lowest terms.

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

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4 A farmer picks a bunch of grapes.
He writes down

A the colour of the grapes
B the number of grapes
C the weight of the grapes
D which plant the grapes were picked from.

(a) Which one of **A**, **B**, **C** or **D** is discrete data?

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

(b) Which one of **A**, **B**, **C** or **D** is continuous data?

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

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5 Niki began a race at 1005.
She finished the race at 1605.

(a) How many hours did Niki take to complete the race?

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

(b) The distance of the race was 42 km.

Work out Niki's average speed.

Answer(b) ..... km/h [1]

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6 From this list write down the irrational number.

$$5 \qquad \sqrt{7} \qquad \frac{2}{9} \qquad \sqrt{9} \qquad 7$$

Answer ..... [1]

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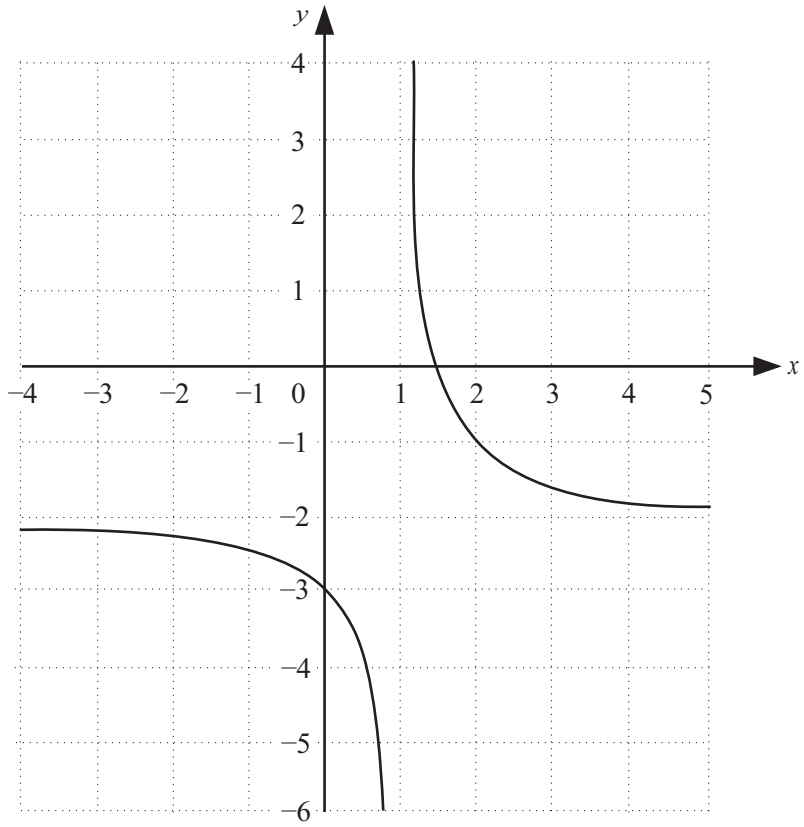
7 The diagram shows the graph of $y = f(x)$.



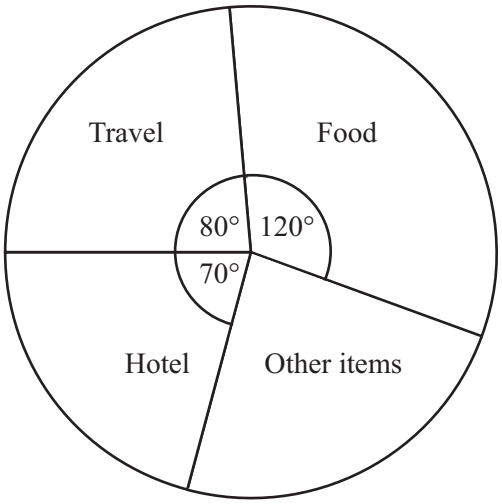
Write down the equations of the two asymptotes of the graph.

Answer .....

..... [2]

8 The total cost of a holiday was $720.

The pie chart shows how this money was spent.



NOT TO SCALE

Find the amount of money spent on

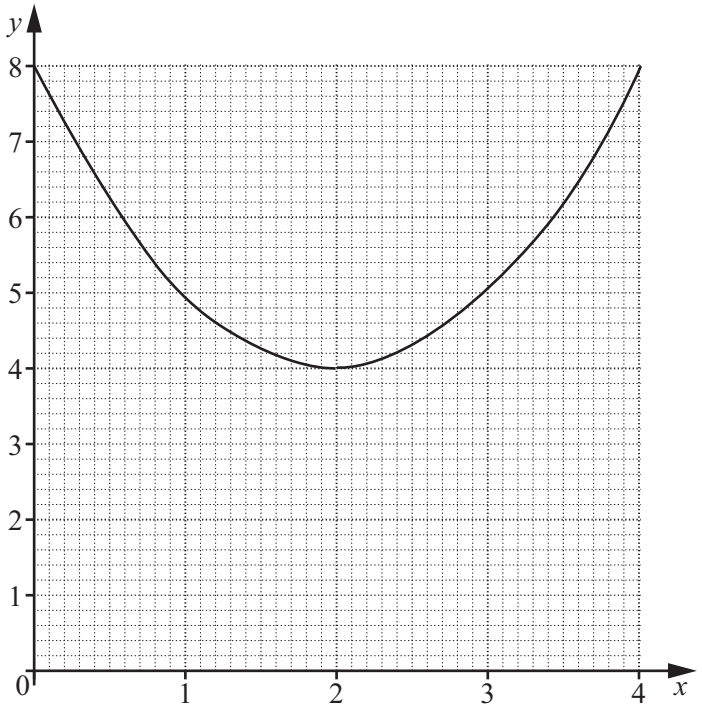
(a) food,

Answer (a) $ ..... [2]

(b) other items.

Answer (b) $ ..... [2]

9

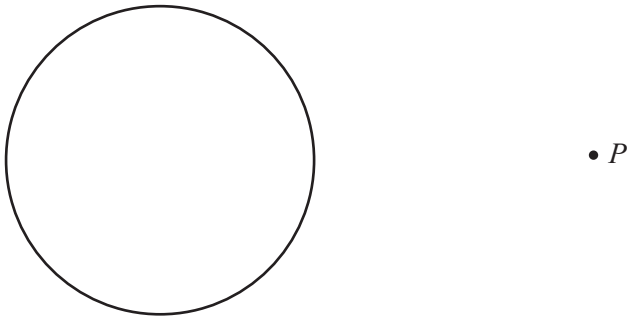


The diagram shows the graph of $y = x^2 - 4x + 8$ for $0 \leqslant x \leqslant 4$.

Write down the equation of the line of symmetry of this graph.

Answer ..... [1]

10



Draw the tangents from P to the circle. [1]

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11 **(a)** Simplify.

(i) $3x - 5 + 2x - 12$

Answer(a)(i) ..... [2]

(ii) $4 \times d \times 2 \times d$

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

(iii) $\frac{x}{3} - \frac{x}{6}$

Answer(a)(iii) ..... [2]

(b) Factorise completely.

$6ab - 8a^2$

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

(c) Solve the following equation.

$x + 8 = 15$

Answer(c) $x =$ ..... [1]

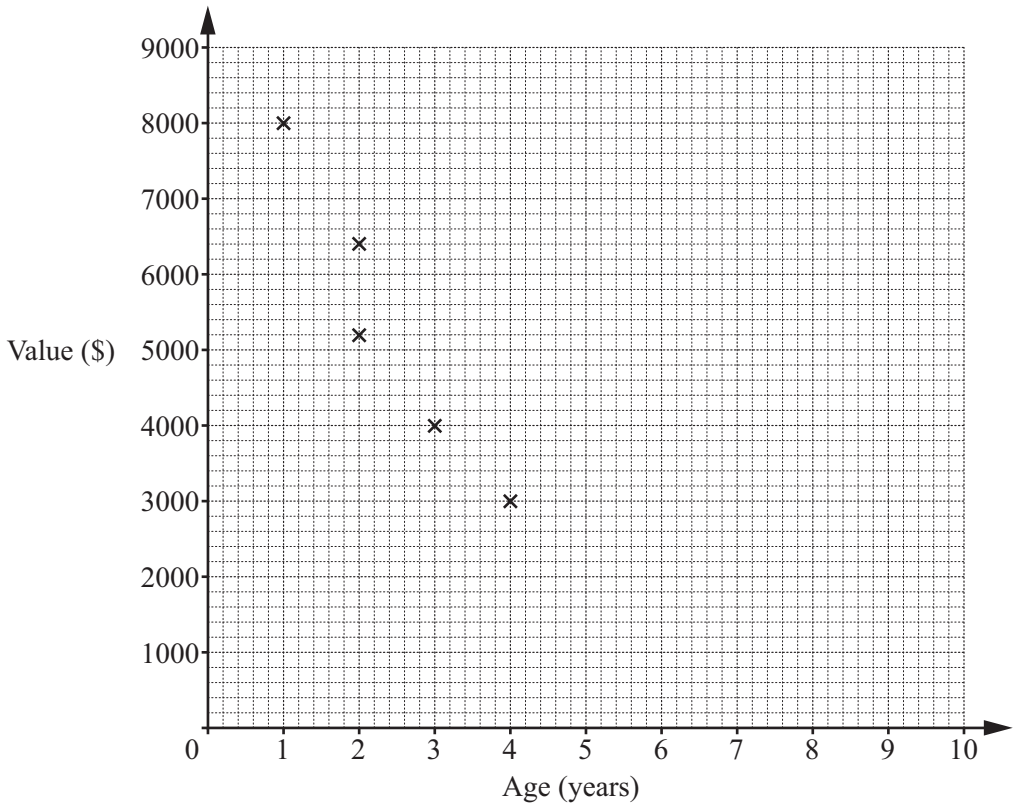
(d) Solve the inequality.

$6x < 4x + 11$

Answer(d) ..... [2]

12 Data has been collected about the age (years) and the value (to the nearest \$100) of the cars owned by a class of University students.

Age (years)	1	2	2	3	4	4	5	7	8
Value (\$)	8000	6400	5200	4000	3000	2100	1700	1200	800



(a) Complete the scatter diagram.
The first five points have been plotted for you. [2]

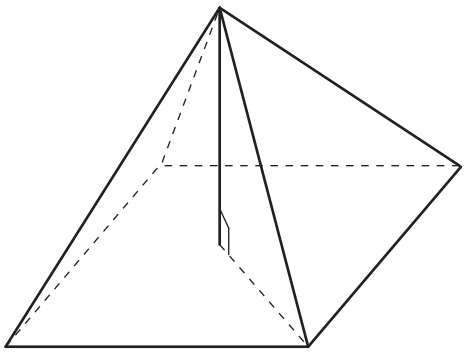
(b) What type of correlation is shown on the scatter diagram?

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

(c) The mean age is 4 years.
The mean value is \$3600.

Draw the line of best fit on your diagram. [2]

13 The base of this pyramid is a square of side 5 m.
It has perpendicular height 12 m.



Work out the volume of the pyramid.

Answer ..... m^3 [3]

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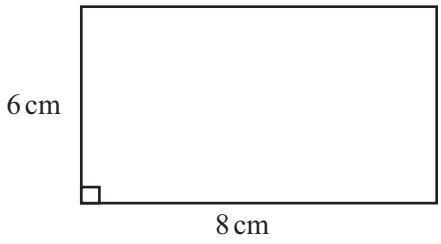
14 A rectangle has sides 6 cm and 8 cm.



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Work out the length of a diagonal of this rectangle.

Answer ..... cm [2]

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