**Cambridge International Examinations**
Cambridge International General Certificate of Secondary Education

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| CANDIDATE NAME | | | | | | | | | |
| CENTRE NUMBER | | | | | | CANDIDATE NUMBER | | | |



**CAMBRIDGE INTERNATIONAL MATHEMATICS** **0607/11**

Paper 1 (Core) **May/June 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.

This document consists of **11** printed pages and **1** blank page.

## 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** Here is a bus timetable.

| Bus stop | Bus 1 | Bus 2 | Bus 3 | Bus 4 |
|---|---|---|---|---|
| **A** | 1522 | 1540 | 1609 | 1638 |
| **B** | 1547 | 1605 | 1634 | 1704 |
| **C** | 1602 | 1620 | ---- | 1722 |
| **D** | 1615 | ---- | 1654 | 1750 |
| **E** | 1630 | 1642 | 1709 | 1811 |

**(a)** Find how many minutes it takes Bus 4 to travel from A to E.

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

**(b)** Jane arrives at B at 1610.

Find how many minutes she has to wait for the next bus.

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

**(c)** Desi travels from C to E.
He must arrive at E by 1700.

Which is the latest bus that he can catch to arrive on time?

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

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**2** Find the lowest common multiple (LCM) of 2 and 5.

*Answer* ..... [1]

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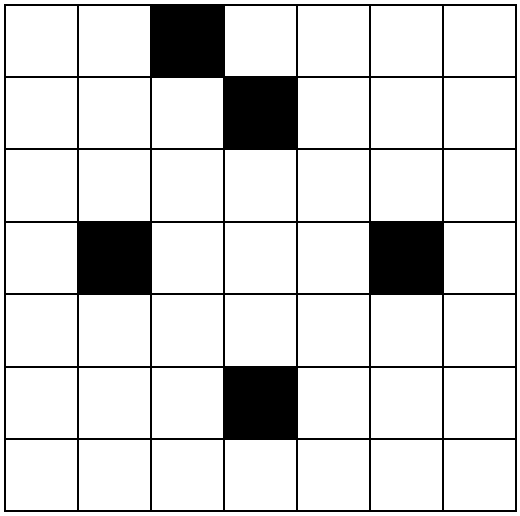
**3**



Shade three more squares so that the diagram has rotational symmetry of order 4. [2]

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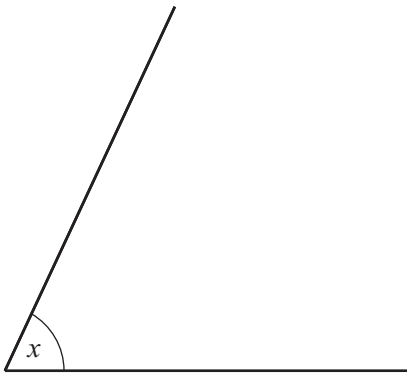
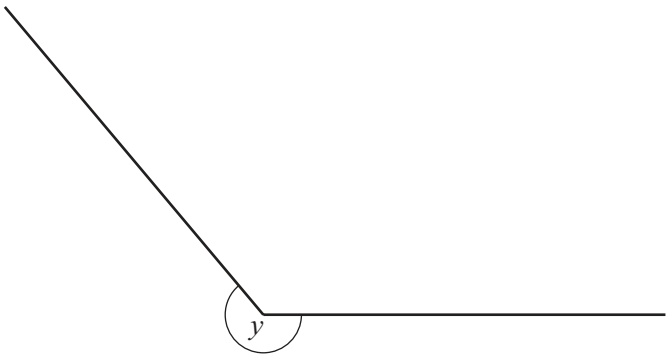
**4** Measure and write down the size of the angles marked $x$ and $y$.




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

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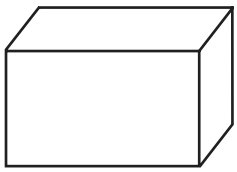
**5**

| | | | | |
|---|---|---|---|---|
| Cone | Cuboid | Kite | Hexagon | Octagon |
| Parallelogram | Pentagon | Pyramid | Rhombus | Trapezium |

From the list above, write down the mathematical name of each of the following shapes.

**(a)**



*Answer(a)* .....

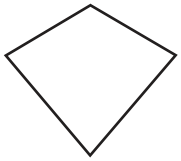
**(b)**

*Answer(b)* .....

**(c)**

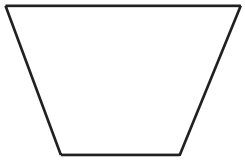
*Answer(c)* .....

**(d)**



*Answer(d)* .....

**(e)**



*Answer(e)* .....

[5]

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**6** **(a)** Write $4 \times 4 \times 4$ as a power of 4.

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

**(b)** Write down the value of $8^0$.

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

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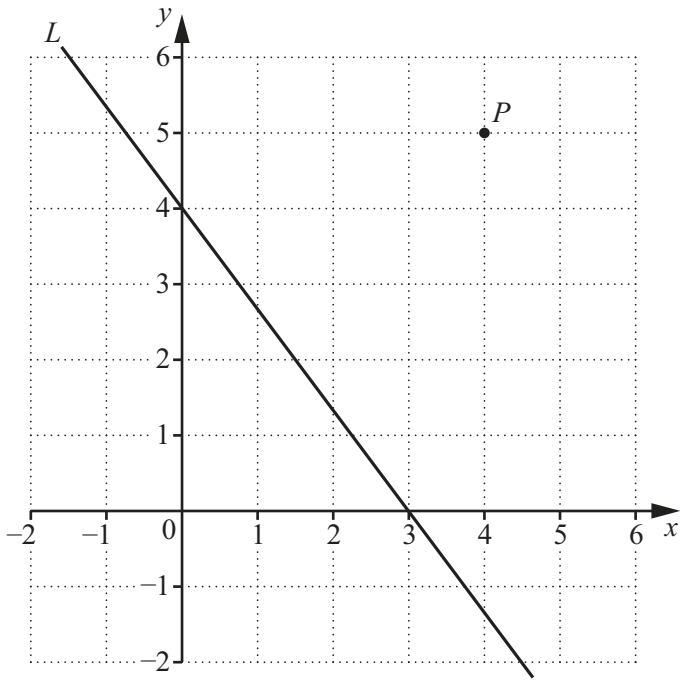
**7**




**(a)** Write down the co-ordinates of $P$.

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

**(b)** Write down the co-ordinates of the point where the line $L$ crosses the $x$-axis.

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

**8** **(a)** **(i)** The mass of a blue whale is 180 000 kg.

Write 180 000 in standard form.

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

**(ii)** Change 180 000 kg into tonnes.

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

**(b)** A blue whale eats shrimps.
The mass of a shrimp is 0.001kg.

Write 0.001 in standard form.

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

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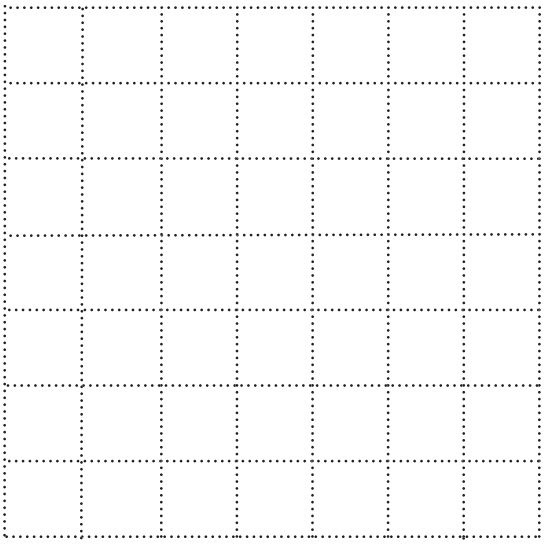
**9** Point $A$ has co-ordinates (1, 4). Point $B$ has co-ordinates (6, 3).

Write $\overrightarrow{AB}$ as a column vector.

You may use the grid to help you.



*Answer* ( ) [2]

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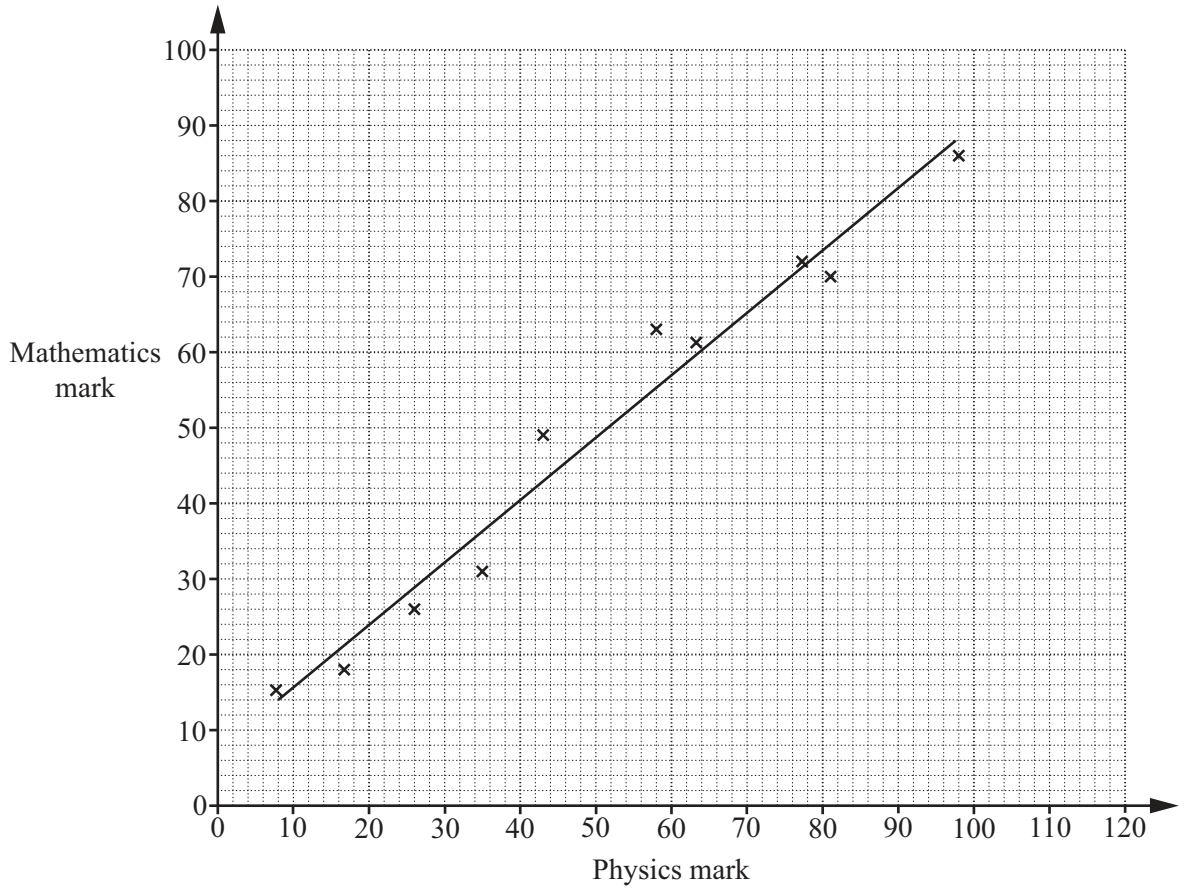
**10** The scatter diagram shows the marks of 10 students in a mathematics test and in a physics test.




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

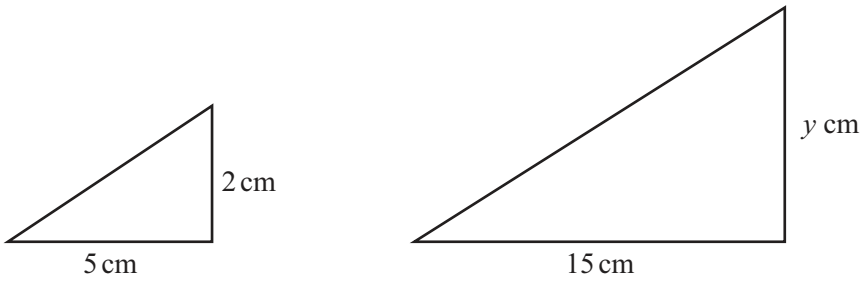
*Answer(a)* ..... [1]

**(b)** Another student scored 88 in the physics test but was absent for the mathematics test.

Use the line of best fit to estimate the mathematics mark for this student.

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

**11**




NOT TO SCALE

The two triangles are similar.

Find the value of $y$.

*Answer* ..... [2]

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**12** **(a)** Expand and simplify.

$$6(x - 2y) + 3(2x - y)$$

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

**(b)** Factorise fully.

$$5p^2q + 10pq^2$$

*Answer(b)* ..... [3]

---

**13** Solve the following simultaneous equations.

$$4x + y = 17$$
$$x - 3y = 1$$

*Answer* $x =$ .....

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

---

**14** A bag contains only red balls and blue balls.

The probability of picking a red ball at random from the bag is $\frac{8}{15}$.

**(a)** What is the probability of picking a blue ball from the bag?

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

**(b)** Jane says that there must be exactly 15 balls in the bag.

Is she correct?
Give a reason for your answer.

*Answer(b)* ..... because .....

..... [1]

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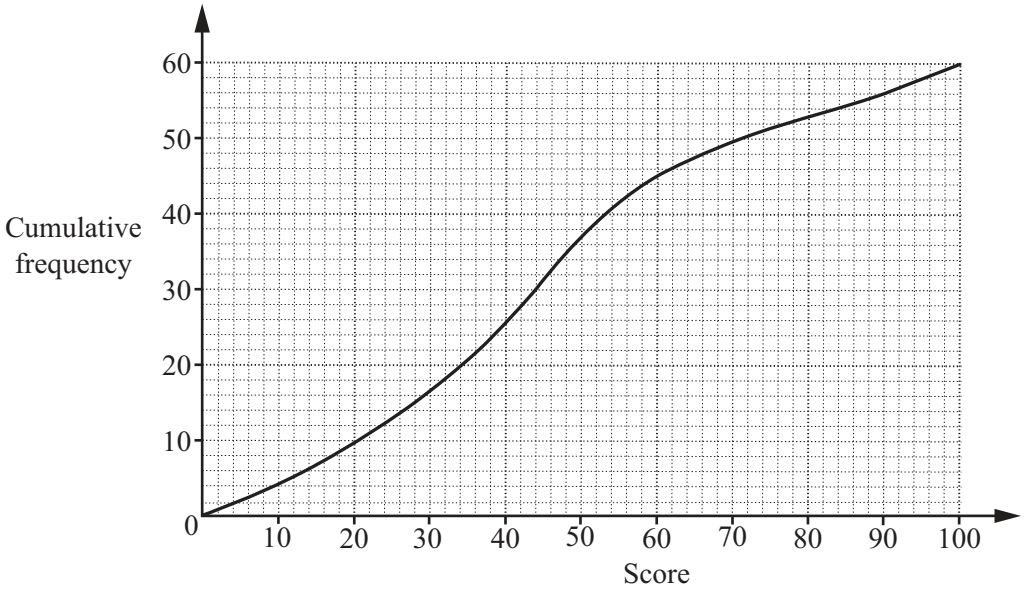
**15** The cumulative frequency diagram shows the scores of 60 students in an English test.




Find

**(a)** the median,

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

**(b)** the lower quartile,

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

**(c)** the interquartile range,

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

**(d)** the number of students who scored more than 90.

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

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