Cambridge IGCSE

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

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

*0354098723*

**CAMBRIDGE INTERNATIONAL MATHEMATICS** **0607/12**

Paper 1 (Core) **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.

## 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.

$6 + 24 \div 3$

..... [1]

**2** By rounding each number to one significant figure, estimate the value of $3.17 \times 4.8$ .

..... [2]

**3** Work out $\frac{2}{3}$ of 21.

..... [1]

**4** Find 20% of 200.

..... [1]

**5** Write down a square number between 12 and 18.

..... [1]

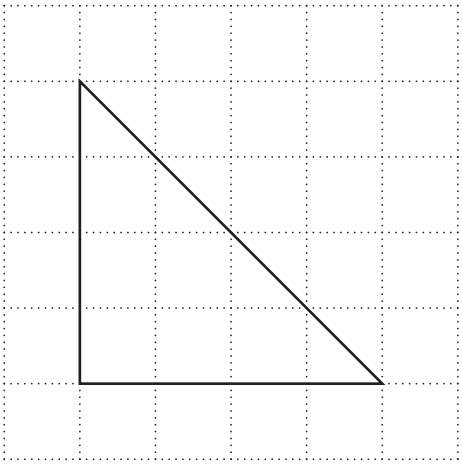
**6** **(a)** Write $2 \times 2 \times 2$ as a power of 2.

..... [1]

**(b)** Work out $3^2$.

..... [1]

**7**

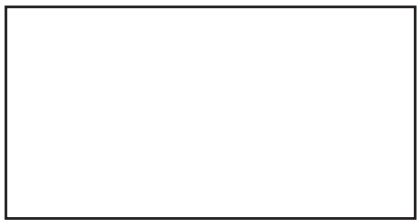


The diagram shows a triangle on a 1 $cm^2$ grid.

Find the area of the triangle.

..... $cm^2$ [1]

**8**



9 cm

NOT TO SCALE

The length of this rectangle is 9 cm.
The perimeter of this rectangle is 30 cm.

Work out the width of this rectangle.

..... cm [2]

**9** 1 kg of bananas and 2 kg of pears cost $5.95 in total.
Pears cost $1.80 per kilogram.

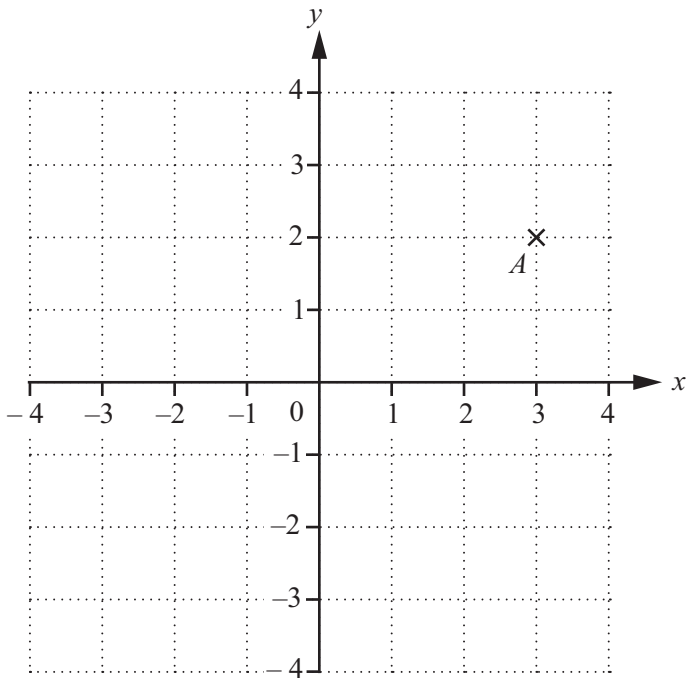
Work out the cost of 1 kg of bananas.

$ ..... [2]

**10** Find the lowest common multiple (LCM) of 12 and 16.

..... [2]

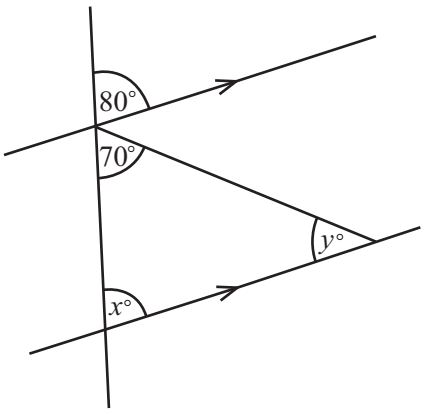
**11**




**(a)** Write down the co-ordinates of point $A$. (....., .....) [1]

**(b)** Plot the point (–3, 1). Label this point $B$. [1]

**12**




NOT TO SCALE

Find the values of $x$ and $y$.

$x$ = .....

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

**13** The point $P$ has co-ordinates (2, 12) and the point $Q$ has co-ordinates (10, 8).

Find the co-ordinates of the midpoint of $PQ$.

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

**14** The list shows the mark for each of ten students in an examination.

7 9 5 5 8 2 6 4 4 9

**(a)** Find the median.

..... [2]

**(b)** Find the mean.

..... [2]

**15** $A = \{2, 3, 4, 5, 6, 7\}$
$B = \{2, 3, 5, 8\}$

**(a)** Write down n($A$).

..... [1]

**(b)** Write down the elements of $A \cup B$.

{ ..... } [1]

**16** The equations of some straight lines are shown below.

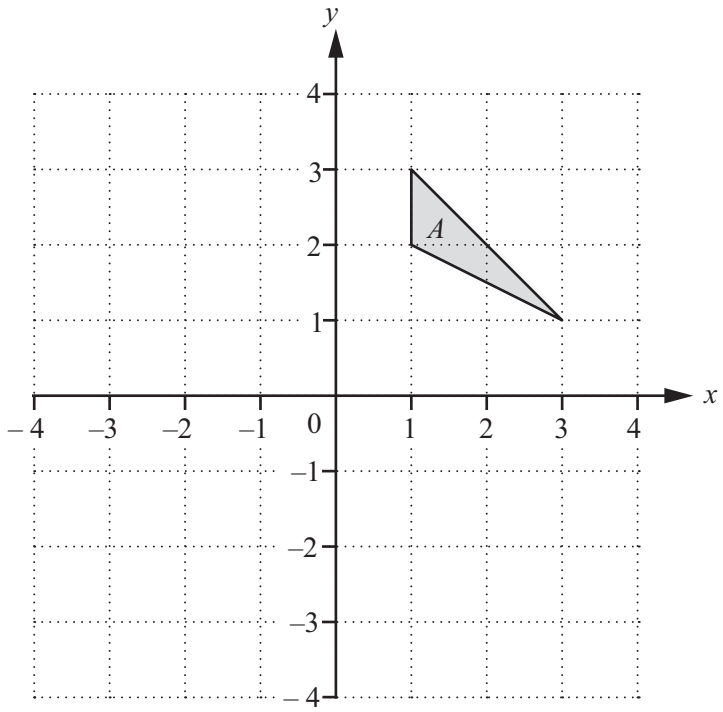
$x = 4$ $y = 3x - 3$ $y = 4x - 3$

$y = 4x + 7$ $y = 4$ $y = -3x - 3$

Write down the equations of the two lines that are parallel.

..... and ..... [1]

**17**




On the grid, draw the image of triangle $A$ after a reflection in the line $y = 1$.

[2]

**18** Describe the **single** transformation that maps $y = f(x)$ onto $y = f(x) – 2$.

.....

[2]

**19** $f(x) = x^2 + 3$

Find the range of $f(x)$ when the domain is $\{–2, 0, 2, 3\}$.

{ ..... }

[2]

**Questions 20, 21 and 22 are printed on the next page.**

**20** Simplify fully.

$$\frac{2e}{5} \times \frac{f}{3e}$$

..... [2]

**21** Write down all integer values of $x$ that satisfy

$$-3 < x \leqslant 1 .$$

..... [2]

**22** Solve the simultaneous equations.

$$5x - y = 7$$
$$4x - y = 5$$

$x =$ .....

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