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CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/12

Paper 1 (Core)

October/November 2020

45 minutes

You must answer on the question paper.

You will need: Geometrical instruments

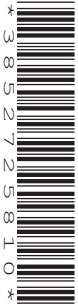
INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly and you will be given marks for correct methods even if your answer is incorrect.
- All answers should be given in their simplest form.

INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [].

This document has **12** pages. Blank pages are indicated.



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.
 $-3 + 5$

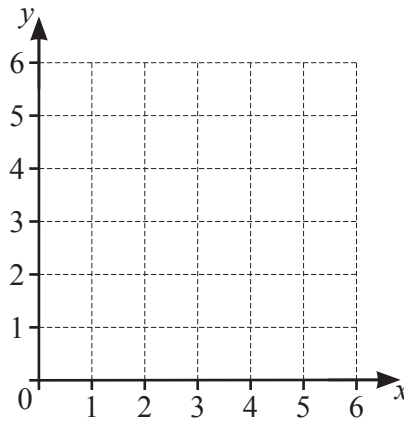
..... [1]

- 2 27 32 35 36 39 42

From the list, write down the square number.

..... [1]

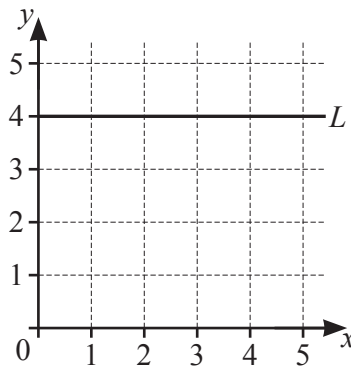
- 3 (a)



On the grid, plot the point (5, 3).

[1]

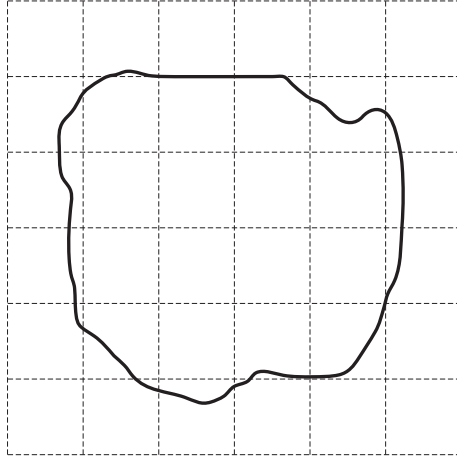
- (b)



Write down the coordinates of any point on the straight line, L .

(..... ,) [1]

4



The diagram shows a shape on a 1 cm^2 grid.

Estimate the area of this shape.

..... cm^2 [1]

5 Write $\frac{3}{10}$ as a decimal.

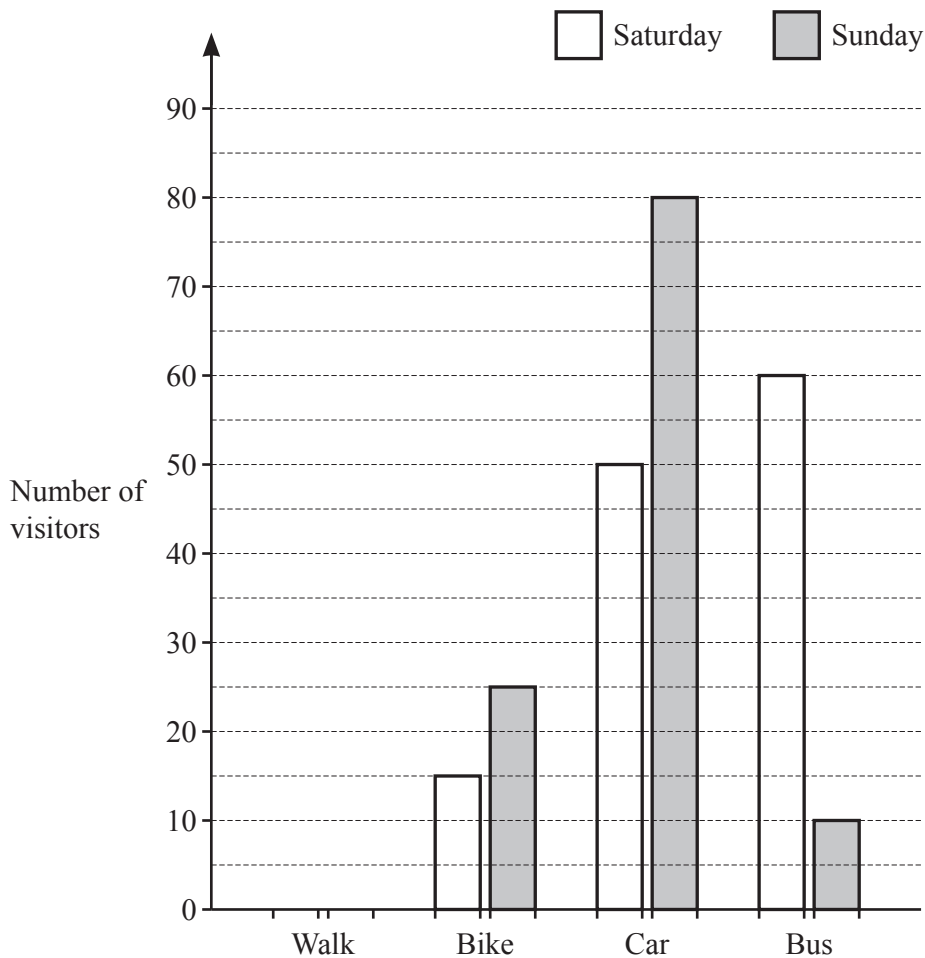
..... [1]

6 Work out $\frac{3}{11}$ of 77.

..... [1]

7 Insert brackets to make this calculation correct.

$3 \times 2 + 4 = 18$ [1]



The bar chart shows some information about the way visitors travel to a museum.

(a) 20 visitors walked on Saturday and 30 visitors walked on Sunday.

Complete the bar chart.

[1]

(b) Find how many more visitors arrived by bus than by car on Saturday.

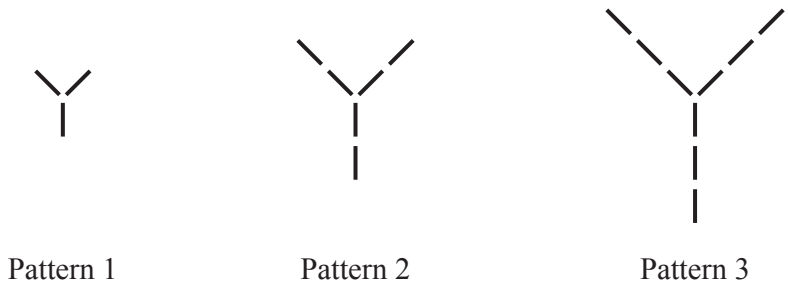
..... [1]

9 The probability that Joanna is late for school is 0.15 .

Find the probability that Joanna is **not** late for school.

..... [1]

10

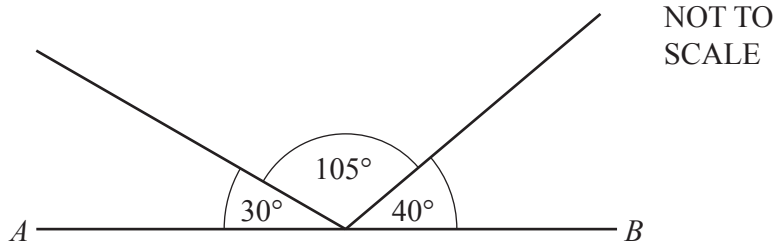


There are 3 rods in Pattern 1.

Write down the number of rods in Pattern 5.

..... [1]

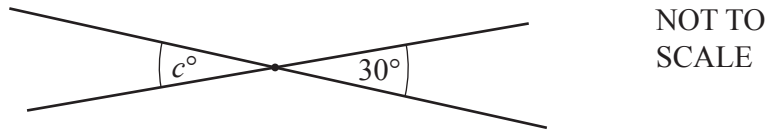
11 (a)



Explain why line *AB* cannot be a straight line.

..... [1]

(b)



Complete the statement.

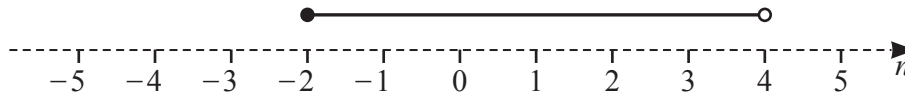
$c =$ because [2]

12 By writing each number correct to 1 significant figure, find an estimate of

$$(6.98 + 3.04) \times 79.92 .$$

..... [2]

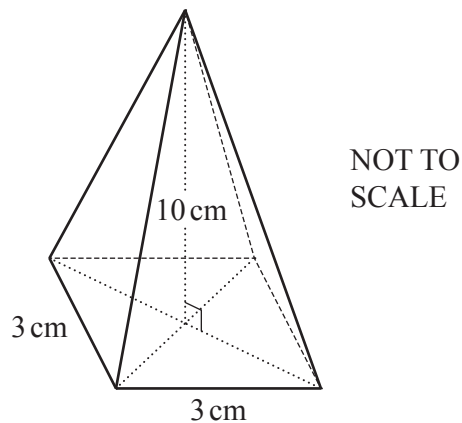
13



Complete the statement using $<$, \leq , $=$, \geq or $>$.

This number line shows the inequality -2 n 4 . [2]

14

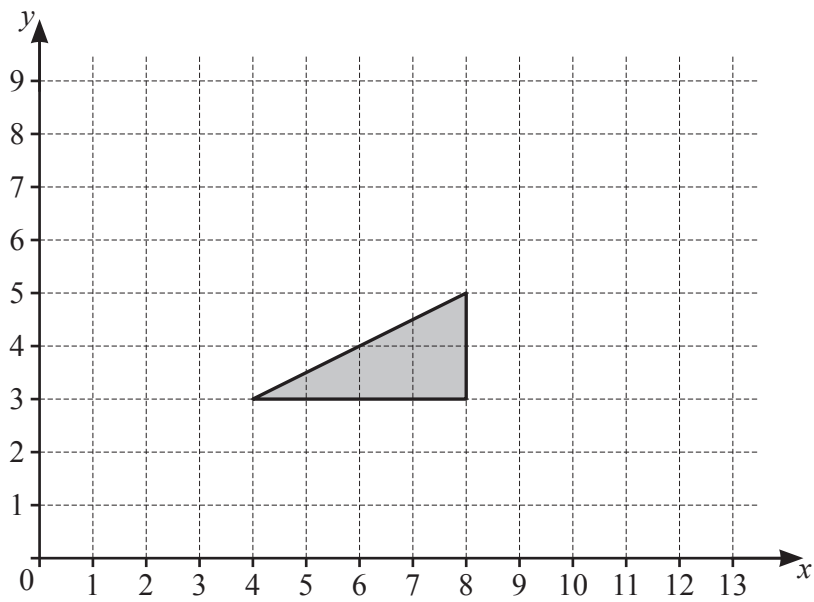


The diagram shows a square-based pyramid of base length 3 cm and vertical height 10 cm.

Calculate the volume of this pyramid.

..... cm^3 [3]

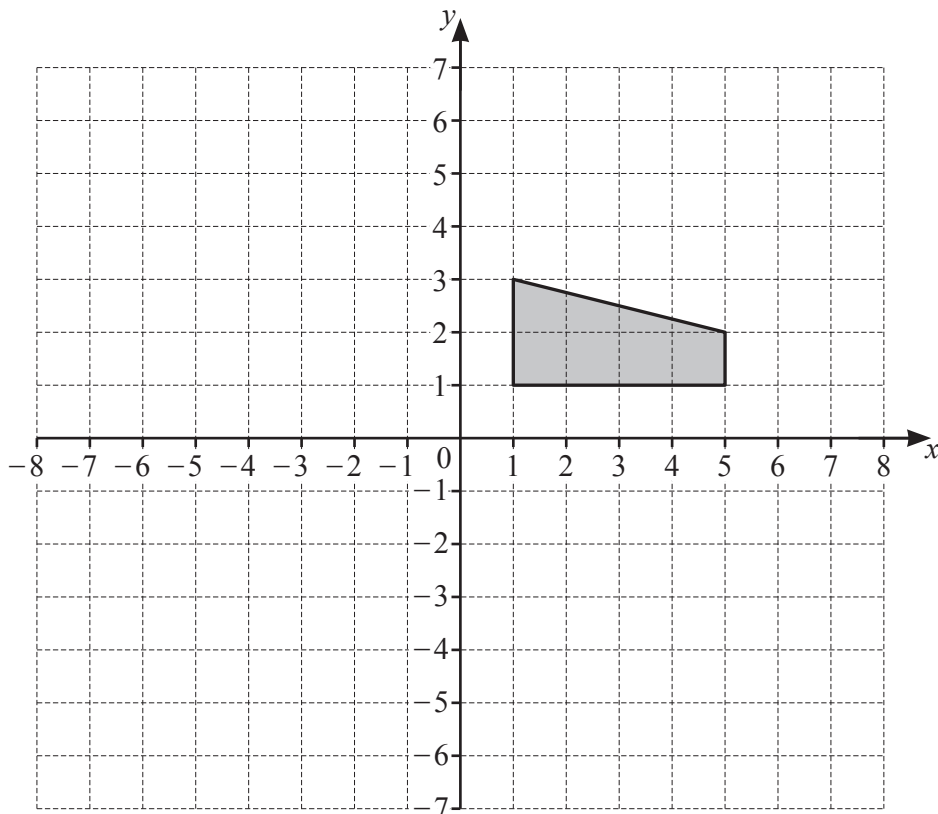
15 (a)



On the grid, translate the triangle by the vector $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$.

[2]

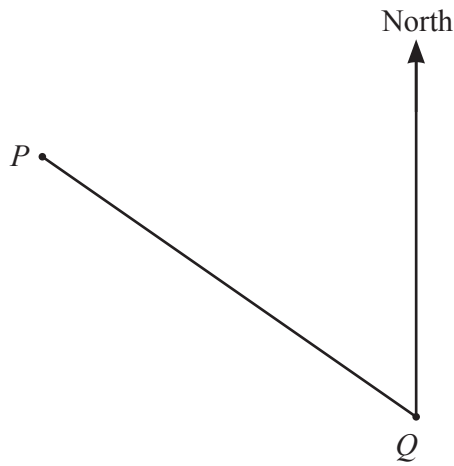
(b)



On the grid, enlarge the shape by scale factor 3 about the point (4, 2).

[2]

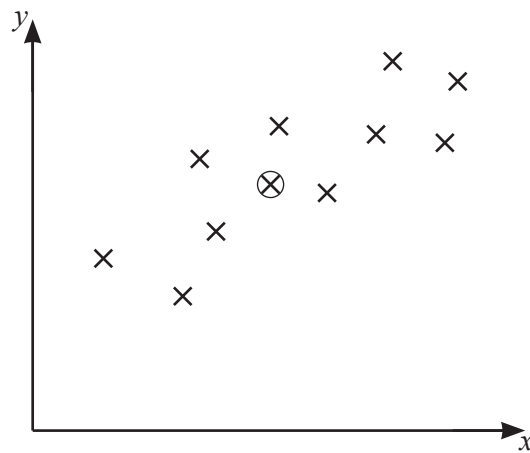
16



Measure the bearing of P from Q .

..... [1]

17



The scatter diagram shows 11 crosses.
10 of the crosses represent data.
The point marked \otimes is the mean point.

On the grid, draw a line of best fit. [2]

18 Make x the subject of the formula.

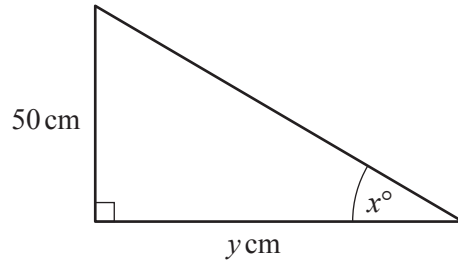
$$y + ax = 5$$

$x =$ [2]

19 Find the highest common factor (HCF) of 15 and 21.

..... [1]

20



NOT TO
SCALE

$$\sin x = \frac{5}{13}$$

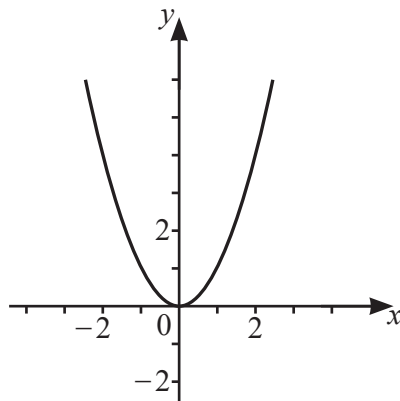
$$\cos x = \frac{12}{13}$$

$$\tan x = \frac{5}{12}$$

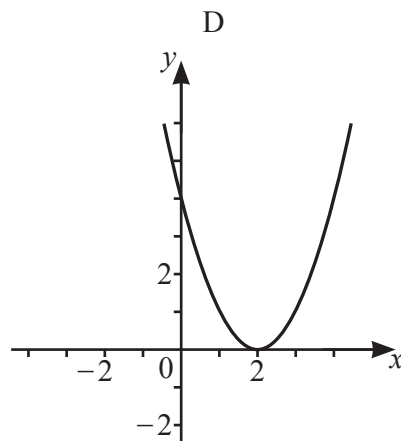
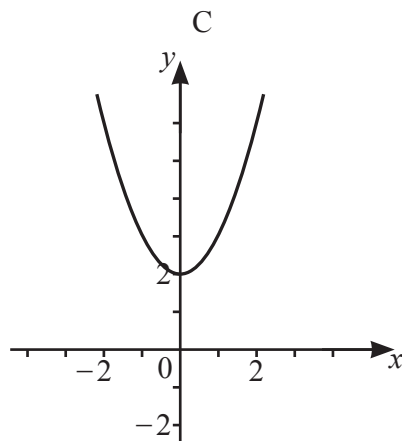
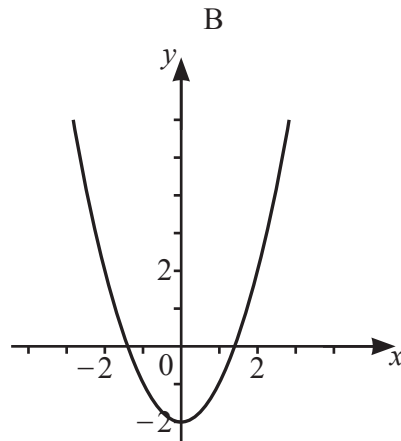
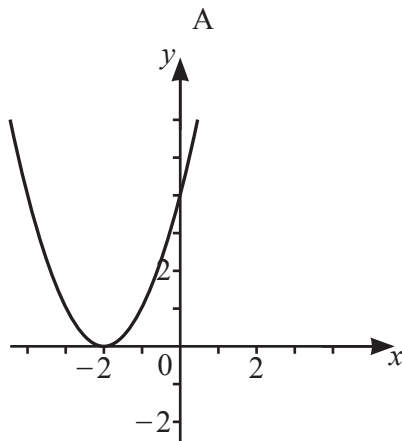
Find the value of y .

$y =$ [2]

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



Here are four more graphs, A, B, C and D.



Write down the letter of the graph which shows

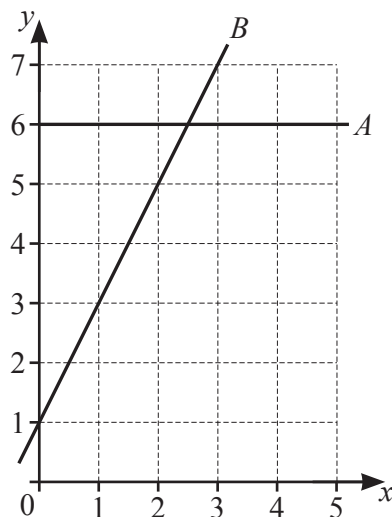
(a) $y = f(x) + 2$,

..... [1]

(b) $y = f(x+2)$.

..... [1]

Question 22 is printed on the next page.



(a) Write down the equation of line A .

..... [1]

(b) Find the equation of line B .

..... [3]

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