Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTER NUMBER						CANDIDATE NUMBER				

6532917956

MATHEMATICS (US) **0444/11**

Paper 1 (Core) **May/June 2020**

1 hour

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, center 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 work clearly.
- All answers should be given in their simplest form.

INFORMATION

- The total mark for this paper is 56.
- The number of marks for each question or part question is shown in parentheses [ ].

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

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[Turn over

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.	$C = 2\pi r$
Lateral surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
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 cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

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1 Write down the value of the 7 in the number 570 296.

..... [1]

2 Marlon takes a test every month for five months.
The table shows his results.

Jan	Feb	Mar	Apr	May
52	48	74	66	60

Work out the mean.

..... [2]

3 Write these numbers in order, starting with the smallest.

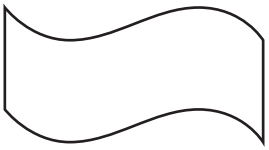
$\frac{13}{100}$ 5% 0.07 $\frac{6}{25}$

..... < ..... < ..... < ..... [2]
smallest

4 **(a)**

On each shape draw all the lines of symmetry. [3]

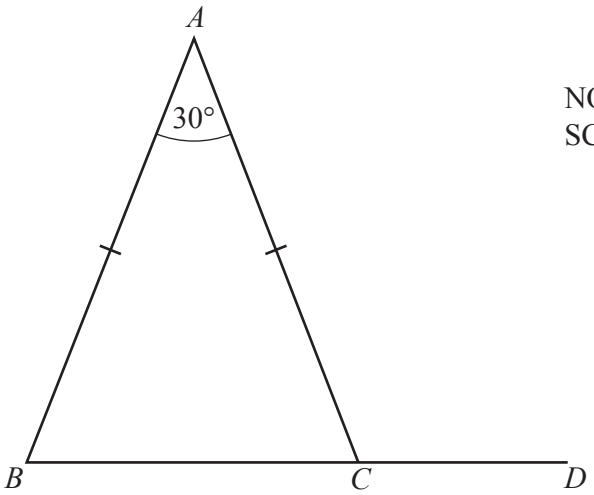
(b)



Write down the order of rotational symmetry of this shape.

..... [1]

5



NOT TO SCALE

In the triangle ABC, $AB = AC$ and angle $BAC = 30°$.
BCD is a straight line.

Work out angle ACD.

Angle ACD = ... [3]

6 The table shows the temperature, in °C, at midday for 5 days in winter in a town in Greenland.

Monday	Tuesday	Wednesday	Thursday	Friday
−4	−8	−19	−17	−14

(a) Work out the difference between the temperature on Tuesday and the temperature on Thursday.

..... °C [1]

(b) On Friday, the temperature at midnight is 8 °C colder than the temperature at midday.

Find the temperature at midnight.

..... °C [1]

7 **(a)** Diana flies from London to New York.
Her flight leaves at 1645 and arrives at 1955 local time.
The local time in New York is 5 hours behind the local time in London.

Work out, in hours and minutes, the time the flight takes.

..... h ..... min [2]

(b) Diana changes £200 into dollars.
The exchange rate is £1 = $1.30 .

Work out how many dollars she receives.

$ ..... [1]

(c) The distance between New York and London is 5600 km.
Diana's return flight takes 7 hours.

Work out the average speed, in km/h, for the return flight.

..... km/h [1]

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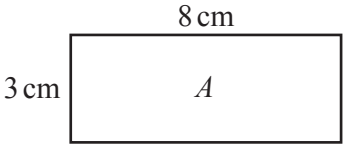
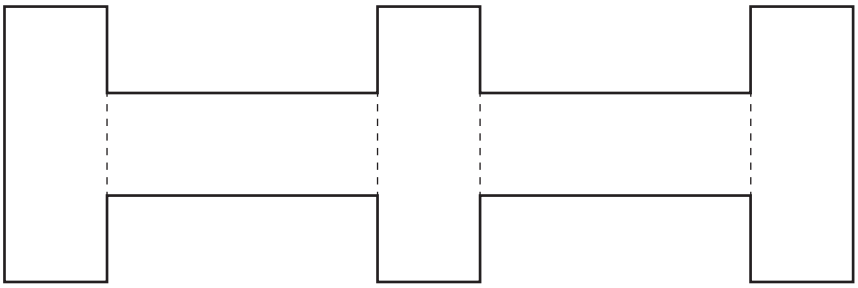
8 Rectangle A measures 3 cm by 8 cm.



NOT TO SCALE

Five rectangles congruent to A are joined to make a shape.



NOT TO SCALE

Work out the perimeter of this shape.

..... cm [2]

9 Find the highest **odd** number that is a factor of 30 and a factor of 45.

..... [1]

10 Elmer has a bag of candy.
Each candy is green, red, black, yellow, or orange.
He takes a candy from the bag at random.

Color	Green	Red	Black	Yellow	Orange
Probability	0.3	0.25	0.1		0.2

Complete the table. [2]

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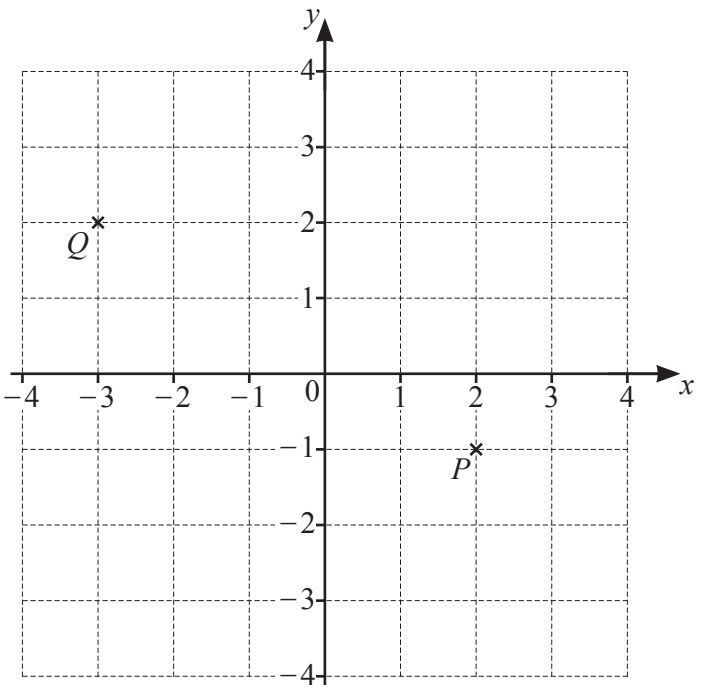
11



(a) Write $\overrightarrow{PQ}$ as a column vector.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $\overrightarrow{QR} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$

Find the coordinates of R.

(..... , ...) [1]

12 Work out the size of one interior angle of a regular 9-sided polygon.

..... [2]

13 A sphere has radius 5 cm.

Work out the surface area of the sphere.
Give your answer in terms of π.

..... cm^2 [2]

14 **(a)** The nth term of a sequence is $60 - 8n$.

Find the largest number in this sequence.

..... [1]

(b) Here are the first five terms of a different sequence.

12 19 26 33 40

Find an expression for the nth term of this sequence.

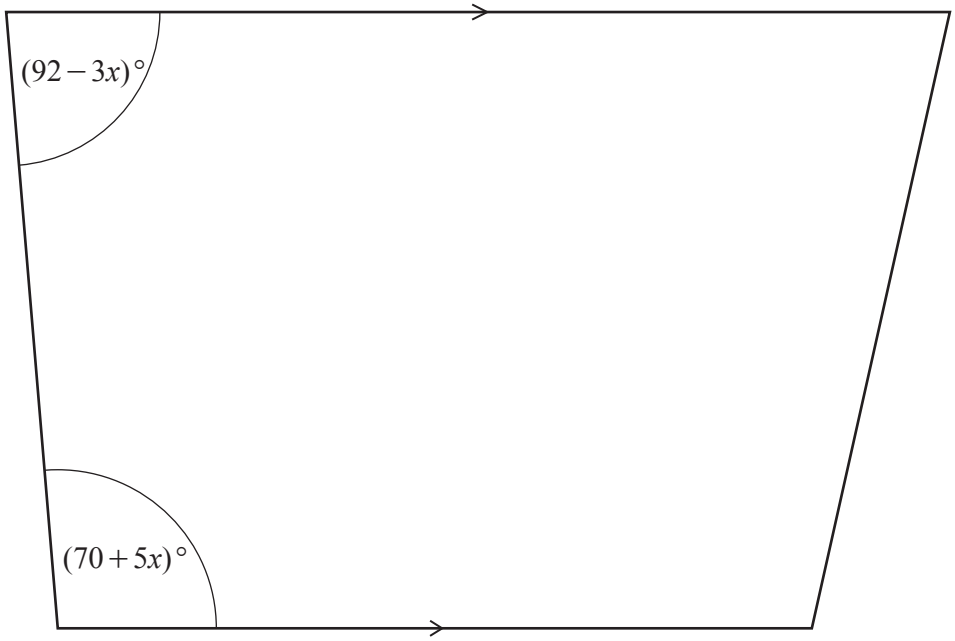
..... [2]

15 Factor completely.

$21a^2 + 28ab$

..... [2]

16 The diagram shows a trapezoid.



NOT TO SCALE

Work out the value of x.

$x =$ ..... [3]

17 Simplify.

$$p^5q^3 \times p^2q^{-4}$$

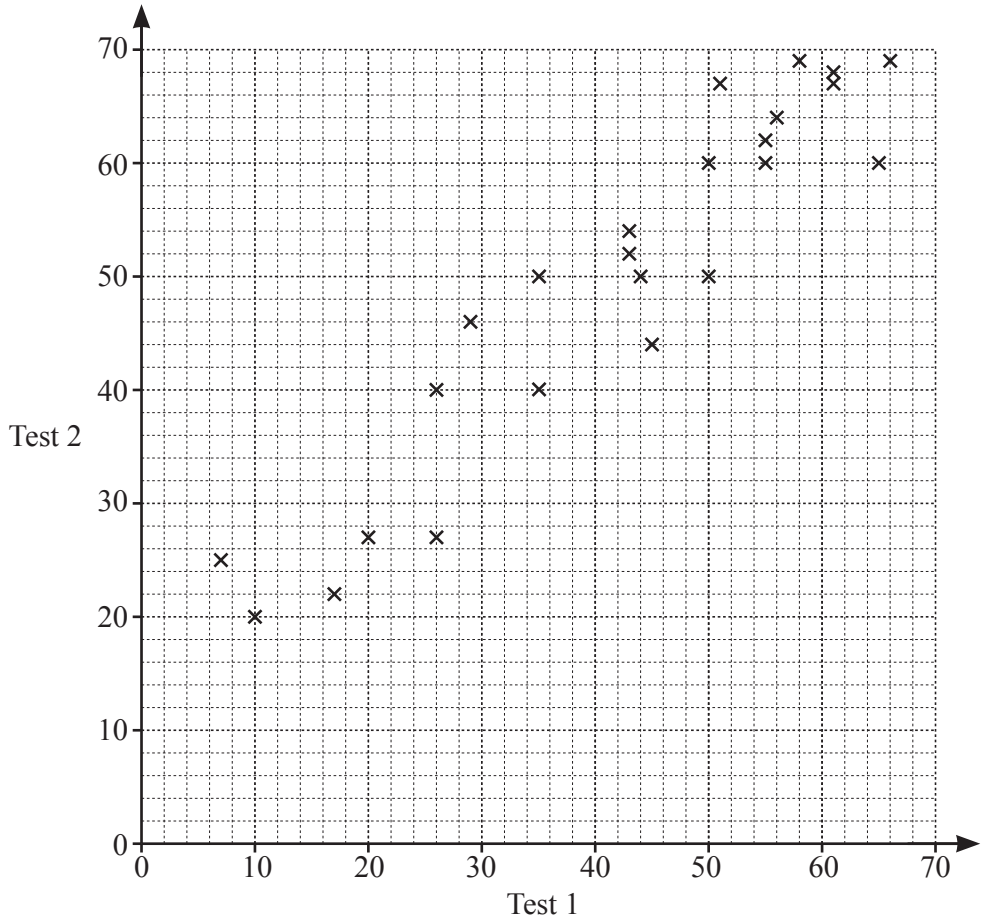
..... [2]

18 Solve for x.

$$y = 2x - 5$$

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

19 Mrs Salaman gives her class two mathematics tests.
The scatter diagram shows information about the marks each student scored.



(a) Write down the highest mark scored on test 1.

..... [1]

(b) Write down the type of correlation shown in the scatter diagram.

..... [1]

(c) Draw a line of best fit on the scatter diagram. [1]

(d) Hamish scored a mark of 40 on test 1.
He was absent for test 2.

Use your line of best fit to find an estimate for his mark on test 2.

..... [1]

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20 One cubic centimeter of a metal has a mass of 11 grams.

Work out the mass, in kilograms, of 1 cubic meter of this metal.

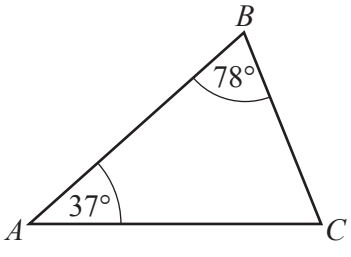
..... kg [2]

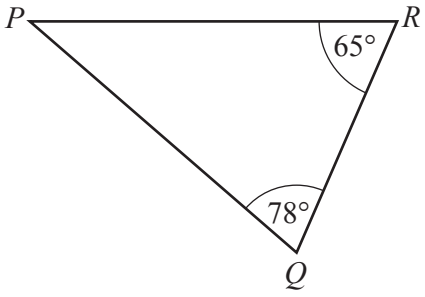
21 Work out $\left(2\frac{1}{3}-\frac{7}{8}\right)\times\frac{6}{25}$.

Give your answer as a fraction in its simplest form.

..... [4]

22





NOT TO SCALE

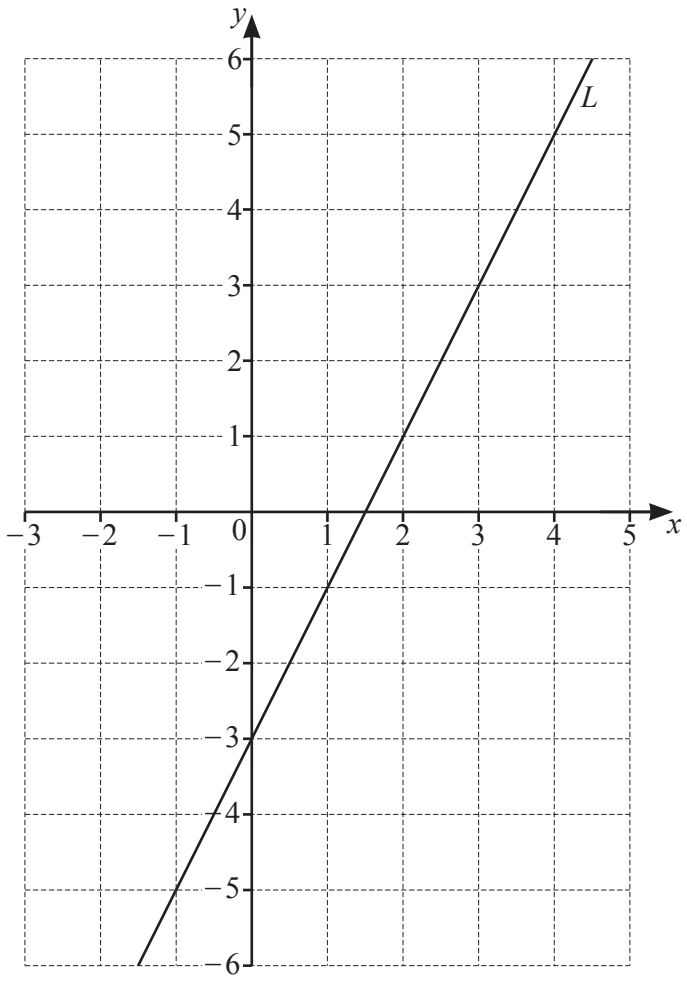
Explain why triangle *ABC* is similar to triangle *PQR*.

.....

..... [2]

Question 23 is printed on the next page.

23



(a) Find the equation of line L in the form $y = mx + b$.

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

(b) On the grid, draw a line that is perpendicular to line L. [1]

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