



CANDIDATE  
NAME

|  |
|--|
|  |
|--|

CENTRE  
NUMBER

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

CANDIDATE  
NUMBER

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

## 0580/11

May/June 2020

**1 hour**

You must answer on the question paper.

You will need: Geometrical instruments

- 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.
- You should use a calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
- For  $\pi$ , use either your calculator value or 3.142.

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

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

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

..... [1]

- 2 The table shows the temperature, in °C, at midday on the first day of each month during one year in a city.

| Jan | Feb | Mar | Apr | May  | Jun  | Jul | Aug | Sep | Oct  | Nov  | Dec |
|-----|-----|-----|-----|------|------|-----|-----|-----|------|------|-----|
| 9   | 11  | 15  | 19  | 23.5 | 27.5 | 29  | 28  | 25  | 19.5 | 14.5 | 10  |

Calculate the mean of these temperatures.

..... °C [2]

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

$$\frac{13}{201}$$

$$5.6\%$$

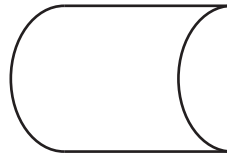
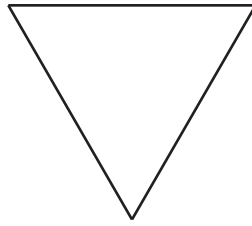
$$0.065$$

$$\frac{5}{89}$$

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

3

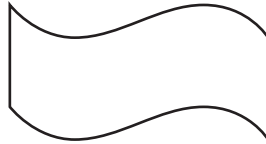
4 (a)



On each shape draw all the lines of symmetry.

[3]

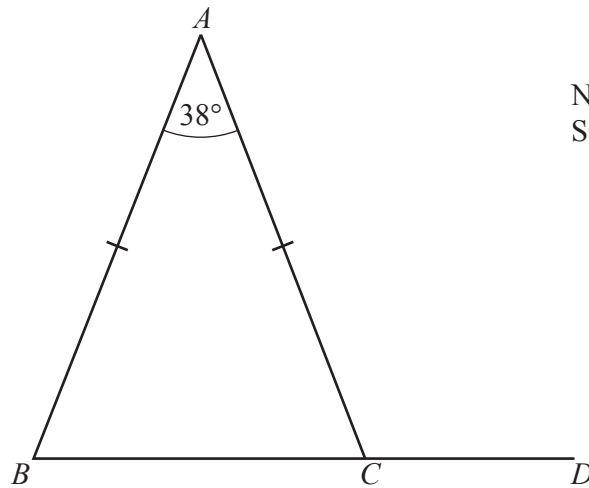
(b)



Write down the order of rotational symmetry of this shape.

..... [1]

5



NOT TO  
SCALE

In the triangle  $ABC$ ,  $AB = AC$  and angle  $BAC = 38^\circ$ .  
 $BCD$  is a straight line.

Work out angle  $ACD$ .

Angle  $ACD =$  ..... [3]

- 6 (a) Diego flies from Madrid to Buenos Aires.  
His flight leaves at 20 55 and arrives at 03 50 local time.  
The local time in Buenos Aires is 5 hours behind the local time in Madrid.

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

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

- (b) Diego changes 200 euros into Argentine Peso.  
The exchange rate is 1 euro = 24.8 pesos.

Work out how many pesos he receives.

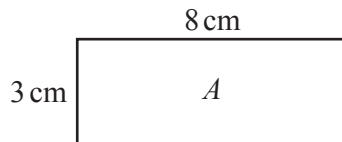
..... pesos [1]

- (c) The distance between Madrid and Buenos Aires is 10 050 km.  
Diego's return flight takes 12 hours 30 minutes.

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

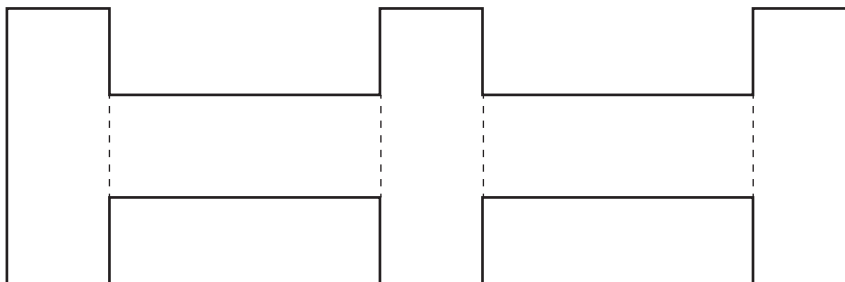
..... km/h [1]

- 7 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

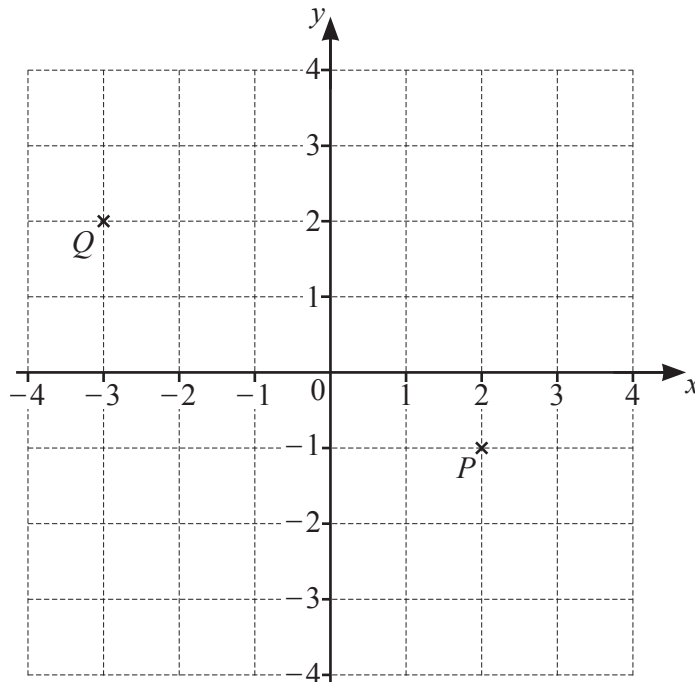
Work out the perimeter of this shape.

..... cm [2]

- 8 Find the highest **odd** number that is a factor of 60 and a factor of 90.

..... [1]

9



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

$\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix}$  [1]

- (b) Write  $3\overrightarrow{PQ}$  as a single vector.

$\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix}$  [1]

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

..... [2]

- 11 A cone has radius 4.5 cm and height 10.4 cm.

Calculate, in terms of  $\pi$ , the volume of the cone.

[The volume,  $V$ , of a cone with radius  $r$  and height  $h$  is  $V = \frac{1}{3}\pi r^2 h$ .]

.....  $\text{cm}^3$  [2]

- 12 (a) The  $n$ th 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  $n$ th term of this sequence.

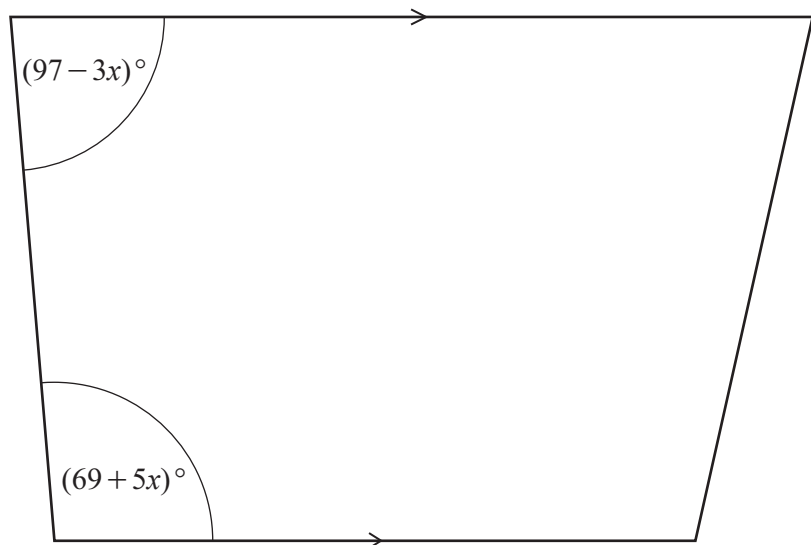
..... [2]

- 13 Factorise completely.

$$21a^2 + 28ab$$

..... [2]

- 14 The diagram shows a trapezium.



NOT TO  
SCALE

Work out the value of  $x$ .

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

- 15 Simplify.

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

..... [2]

- 16 (a) Write the number 0.0605 in standard form.

..... [1]

- (b) Calculate  $(1.63 \times 10^{12}) \times (2.47 \times 10^{-1})$ .  
Give your answer in standard form.

..... [1]

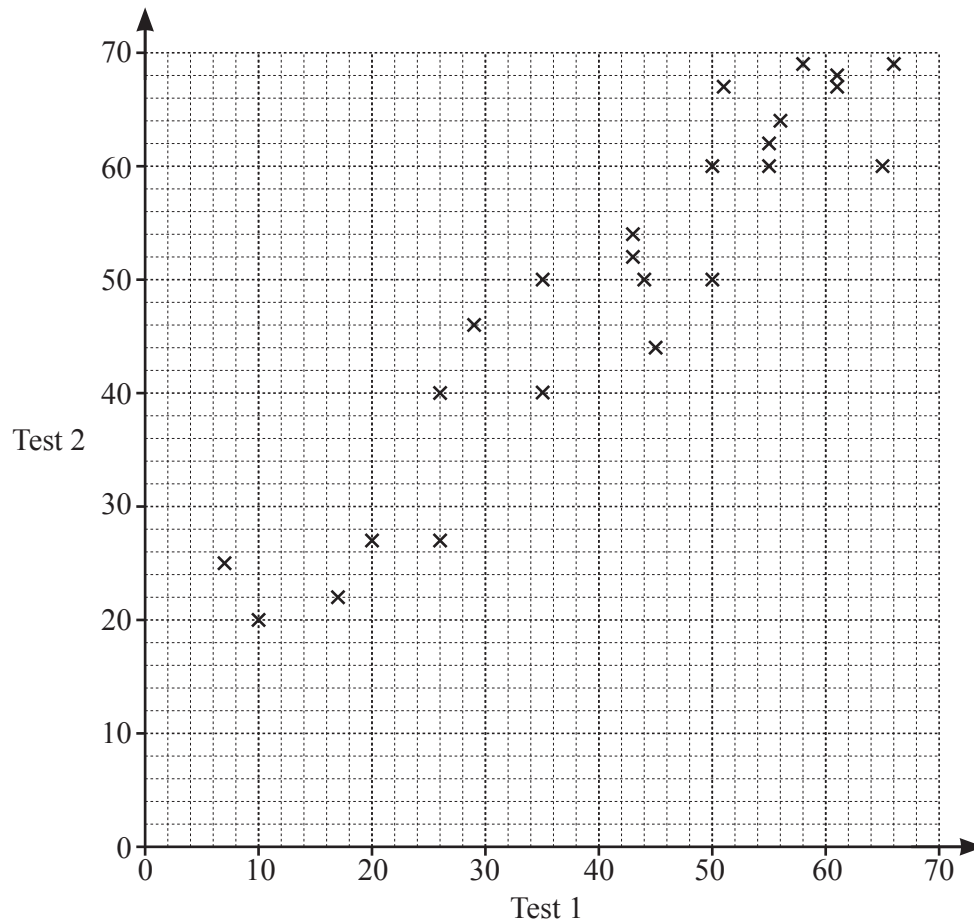
17 Expand and simplify.

$$(x-5)(x-7)$$

..... [2]

18 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]



- 19 The length,  $l$  cm, of a sheet of paper is 29.7 cm, correct to the nearest millimetre.

Complete this statement about the value of  $l$ .

.....  $\leq l <$  ..... [2]

- 20 **Without using a calculator**, work out  $\left(2\frac{1}{3} - \frac{7}{8}\right) \times \frac{6}{25}$ .

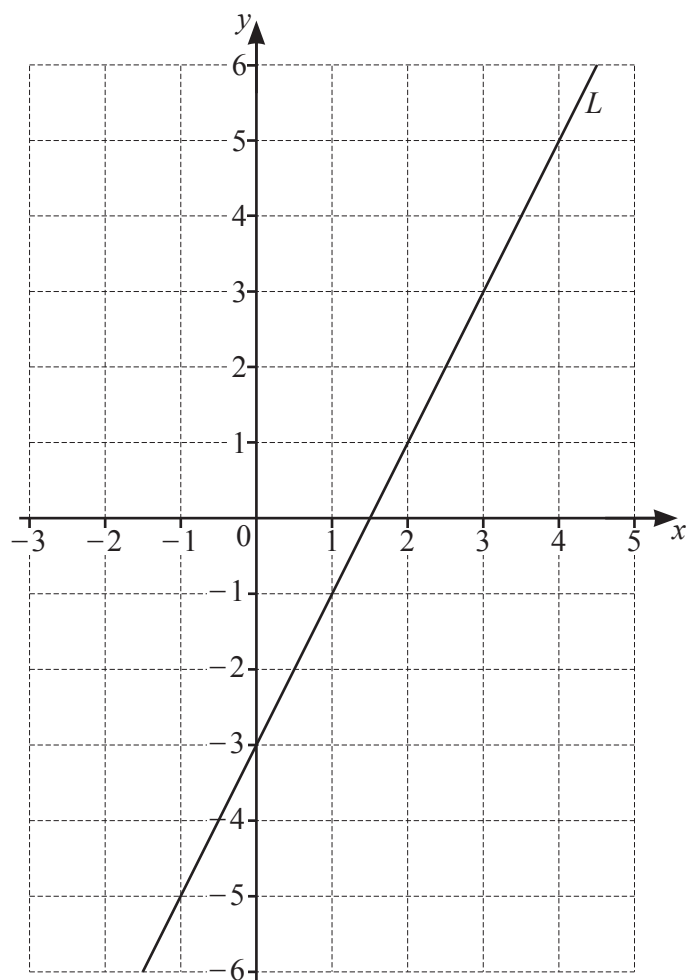
You must show all your working and give your answer as a fraction in its simplest form.

..... [4]

- 21 Lucia invests \$5000 at a rate of 4.5% per year compound interest.

Calculate the value of her investment at the end of 7 years.

\$ ..... [2]

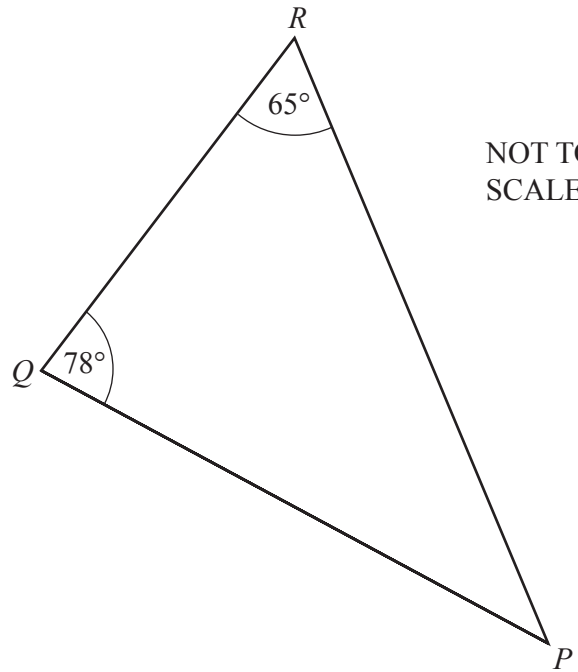
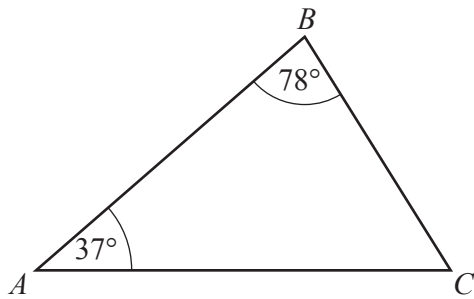


- (a) Find the equation of line  $L$  in the form  $y = mx + c$ .

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

- (b) On the grid, draw a line that is perpendicular to line  $L$ .

[1]



NOT TO  
SCALE

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

.....

.....

[2]

---

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cambridgeinternational.org](http://www.cambridgeinternational.org) after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.