

CANDIDATE  
NAME

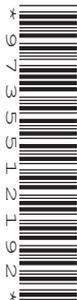
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CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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**MATHEMATICS**

Paper 1 (Core)

**0626/01**

**May/June 2017**

**1 hour**

Candidates answer on the Question Paper.

Additional Materials:      Geometrical instruments  
   Tracing paper (optional)

**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.

You may use an HB pencil for any diagrams and graphs.

Do not use staples, paper clips, glue or correction fluid.

**DO NOT WRITE IN ANY BARCODES.**

Answer **all** questions.

**Electronic calculators should be used.**

If working is required for any question it must be shown below that question.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.

For  $\pi$ , use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [ ] at the end of each question or part question.

The total of the marks for this paper is 60.

This syllabus is regulated for use in England as a Cambridge International Level 1/Level 2 (9–1) Certificate.

This document consists of **12** printed pages.

- 1 Work out  $\frac{3}{8}$  of 1232.

..... [1]

- 2 Here are the times, in minutes, it takes 5 children to walk to school.

23            15            17            31            28

Find the range of these times.

..... minutes [1]

- 3

SALE  
15% off all stock

A shirt costs £19.99 before the sale.  
A shop assistant calculates the sale price.

$0.85 \times 19.99 = 16.9915$

Write down the sale price of the shirt.

£ ..... [1]

- 4 Write down all the prime numbers between 14 and 20.

..... [1]

5 Write the following in order of size, smallest first.

0.18

 $\frac{1}{8}$ 

8.1%

 $0.3^2$ 

..... [2]  
*smallest*

6 Calculate.

$$\frac{\sqrt{10}}{2.4^3}$$

Give your answer correct to 3 decimal places.

..... [2]

7 Here is a list of numbers.

5

16

27

64

111

175

205

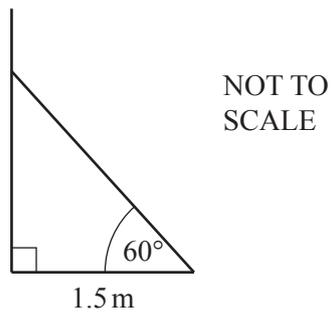
(a) Write down the number from the list that is both a square number and a cube number.

..... [1]

(b) Write down the number from the list that is a multiple of 25.

..... [1]

- 8 The diagram shows a ladder, on horizontal ground, leaning against a vertical wall.



**Using a ruler and protractor**, make a scale drawing of the ladder, the ground and the wall.  
Use a scale of  $1\text{ cm}$  to represent  $0.5\text{ m}$ .  
The wall has been drawn for you.

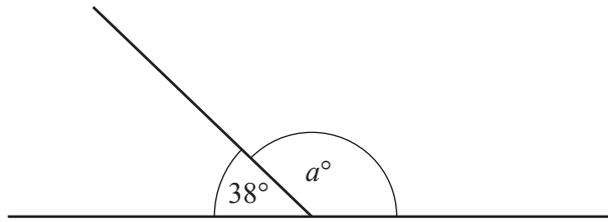
wall



Scale:  $1\text{ cm}$  to  $0.5\text{ m}$

[2]

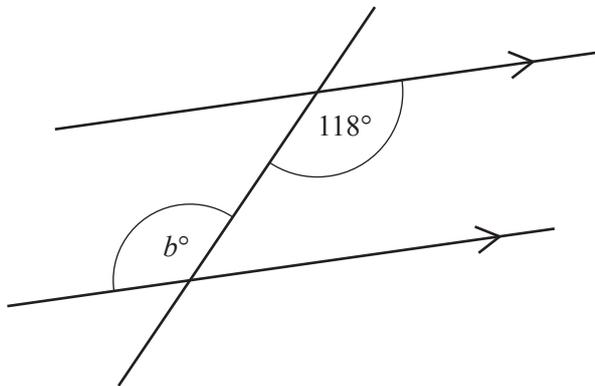
9 (a)

NOT TO  
SCALE

Work out the value of  $a$ .  
Give a reason for your answer.

$a =$  ..... because ..... [2]

(b)

NOT TO  
SCALE

Complete this statement with a reason.

$b = 118$  because ..... [1]

- 10 In a college, 573 of the 5300 students are left-handed.  
384 of the 3200 **male** students are left-handed.

Show that 9% of the **female** students are left-handed.

[2]

- 11 Paula changes €800 into pounds (£) when the exchange rate is £1 = €1.41.

How much does Paula receive?

Give your answer in pounds, correct to the nearest penny.

£ ..... [2]

- 12 (a) Mark's basic pay rate is £ $h$  per hour.  
When Mark works overtime, he earns one and a half times his basic pay rate.  
One week, Mark works for 37 hours at his basic pay rate and 8 hours of overtime.

Find and simplify an expression, in terms of  $h$ , for the total amount Mark earns this week.

£ ..... [2]

- (b) Salma's basic pay rate is £3 per hour more than Mark's basic pay rate.  
Her overtime rate is double her basic pay rate.  
One week, Salma works for 30 hours at her basic pay rate and 2 hours of overtime.

Show that Salma earns a total of £ $(34h + 102)$  this week.

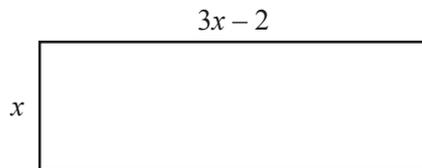
[2]

- 13 Jacob buys 2 litres of milk and 0.75 litres of water.  
He pays £1.76 in total.  
The water costs £1.12 per litre.

How much does the milk cost per litre?

£ ..... [3]

- 14 In this question all lengths are in centimetres.



NOT TO  
SCALE

The perimeter of this rectangle is 122 cm.

Calculate the value of  $x$ .

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

- 15 (a) Erin saved £860 at a rate of 8% per year **simple** interest.

Calculate the amount Erin had after 3 years.

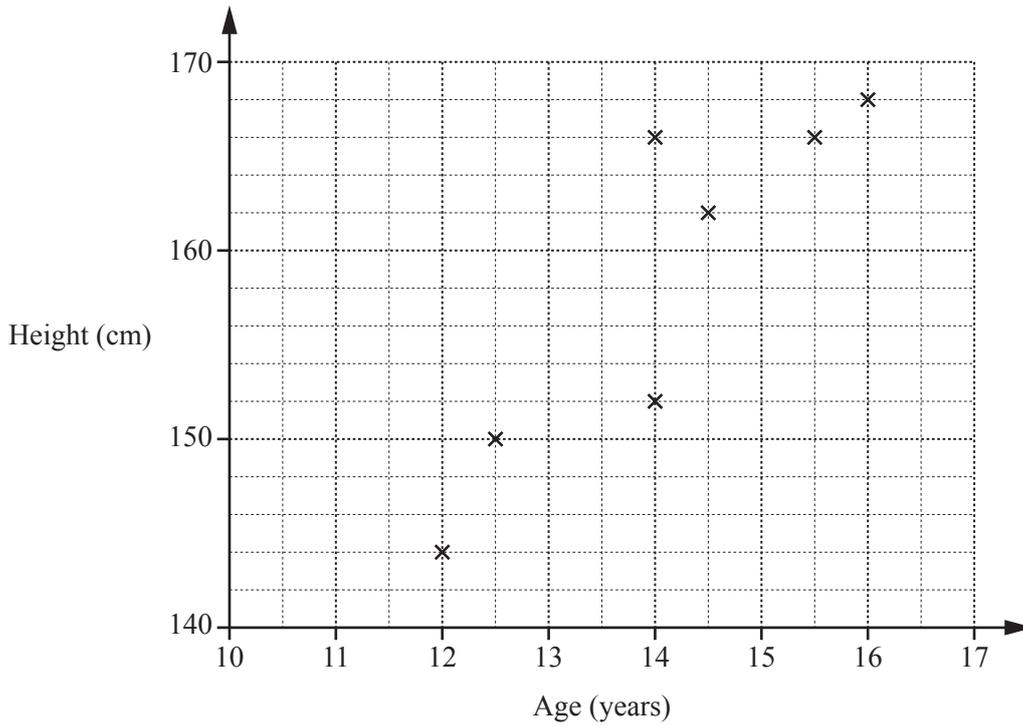
£ ..... [3]

- (b) Tasnia invested £1700 at a rate of 6% per year **compound** interest.

Calculate the amount Tasnia had after 2 years.

£ ..... [2]

16 The scatter diagram shows the age and height of some girls in a sports team.



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

(b) Use your line of best fit to estimate the height of a 13-year-old girl.

..... cm [1]

(c) Harry says:

Using the scatter diagram, I estimate that the height of a 24-year-old woman is about 288 cm.

Harry has used the data in the scatter diagram incorrectly.

(i) Explain how Harry has used the scatter diagram to make his estimation.

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

(ii) Explain why Harry should not have used the scatter diagram to make his estimation.

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

17 The table shows the relative frequency of the medals awarded in a national mathematics competition.

Medal	None	Bronze	Silver	Gold
Relative frequency	0.35	0.4		0.1

(a) Complete the table. [2]

(b) 120 students from one school entered the competition.

Work out the expected number of bronze medals awarded to these students.

..... [1]

18 Simplify.

(a)  $m^0 \times m^3$

..... [1]

(b)  $(y^4)^{-2}$

..... [1]

(c)  $\frac{3x^6y^4}{21x}$

..... [2]

19 The length,  $l$  metres, of a piece of rope is 13.2 metres correct to 1 decimal place.

(a) Complete the following statement about  $l$ .

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

(b) A water wheel has radius 2.1 metres.

Show that the rope may not be long enough to fit around the circumference of the wheel.

[3]

20 The number 2017 can be written as the sum of two square numbers.  
One of the square numbers is less than 100.

Complete the sum.

$$2017 = \dots\dots\dots + \dots\dots\dots [2]$$

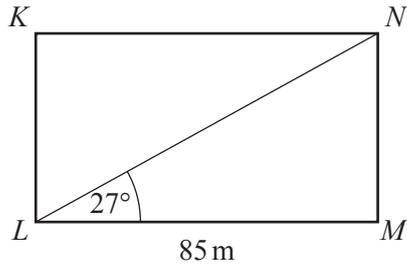
Questions 21 and 22 are printed on the next page.

21 Expand and simplify.

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

..... [2]

22



NOT TO SCALE

The diagram shows a rectangle  $KLMN$ .

(a) Calculate  $LN$ .

$LN =$  ..... m [3]

(b) Calculate the shortest distance from  $M$  to the line  $LN$ .

..... m [3]

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