Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

MATHEMATICS **0580/13**

Paper 1 (Core) **October/November 2019**

1 hour

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator
Tracing paper (optional)
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.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
If working is needed for any question it must be shown below that question.
Electronic calculators should be used.
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 π, 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 56.

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

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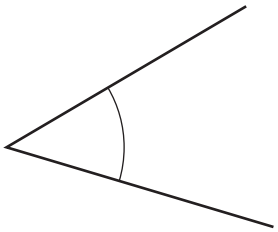
1 Write down the mathematical name of this type of angle.

View solution



..... [1]

2 Change 560 metres into kilometres.

View solution

..... km [1]

3 Write the number forty thousand three hundred in figures.

View solution

..... [1]

4 Factorise $12x + 15$.

View solution

..... [1]

5 Put one pair of brackets into each calculation to make it correct.

(a) $8 + 6 - 2 \times 5 = 28$ [1]

View solution

(b) $8 + 6 - 2 \times 5 = 60$ [1]

View solution

6 **(a)** Write down the temperature that is 7 °C below −3 °C.

View solution

..... °C [1]

(b) Work out the difference in temperature between −4 °C and 4 °C.

View solution

..... °C [1]

7 Here is a list of numbers.

87 77 57 47 27

From this list, write down

(a) a cube number,

View solution

..... [1]

(b) a prime number.

View solution

..... [1]

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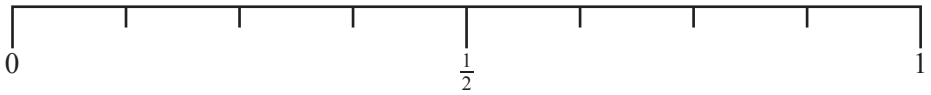
8 A bag contains 6 red balls and 10 blue balls only.

On the probability scale, draw an arrow (↓) to show the probability that a ball taken at random is

View solution

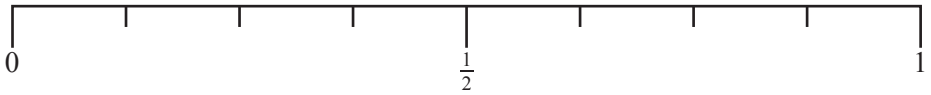
(a) blue,



[1]

View solution

(b) red or blue.



[1]

View solution

9 The price of a television is $560.
This price is reduced by 18% in a sale.

Work out the sale price.

$ ..... [2]

View solution

10 Calculate the circumference of a circle with radius 4.5 cm.

..... cm [2]

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11 Write in standard form.

(a) 72 000

View solution

..... [1]

(b) 0.0018

View solution

..... [1]

12 Expand and simplify $(x+3)(x+5)$.

View solution

..... [2]

13 **(a)** $x^3 \times x^6 = x^m$

View solution

Find the value of m.

$m =$ ..... [1]

(b) $\left(x^2\right)^n = x^{12}$

View solution

Find the value of n.

$n =$ ..... [1]

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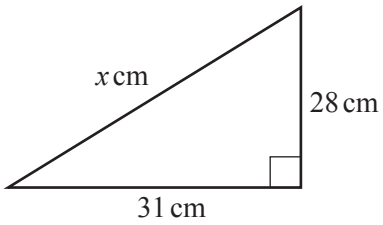
14 The diagram shows a right-angled triangle.

View solution

NOT TO SCALE



Show that the value of x is 41.8, correct to 3 significant figures.

[2]

15 Davina records the colour of each car passing her house one morning.

red	grey	black	red	grey
white	white	black	black	white
grey	red	grey	white	grey
black	grey	black	white	grey

View solution

(a) Complete the frequency table.
You may use the tally column to help you.

Colour of car	Tally	Frequency
Black		
Grey		
Red		
White		

[2]

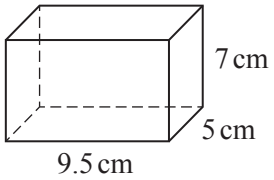
(b) Write down the mode.

..... [1]

View solution

16 A cuboid measures 5 cm by 7 cm by 9.5 cm.

View solution



NOT TO SCALE

Work out the surface area of this cuboid.

..... cm^2 [3]

17 Work out.

(a) $\begin{pmatrix} -3 \\ 5 \end{pmatrix} + \begin{pmatrix} 2 \\ -4 \end{pmatrix}$

View solution

( ) [1]

(b) $\begin{pmatrix} 6 \\ 2 \end{pmatrix} - \begin{pmatrix} 1 \\ 5 \end{pmatrix}$

View solution

( ) [1]

(c) $4\begin{pmatrix} 2 \\ -5 \end{pmatrix}$

View solution

( ) [1]

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18 Here is a list of ingredients to make 12 pancakes.

View solution

110 g	flour
2	eggs
200 ml	milk
50 g	butter

Complete the list of ingredients below to make 30 pancakes.

..... g flour

..... eggs

..... ml milk

..... g butter

[3]

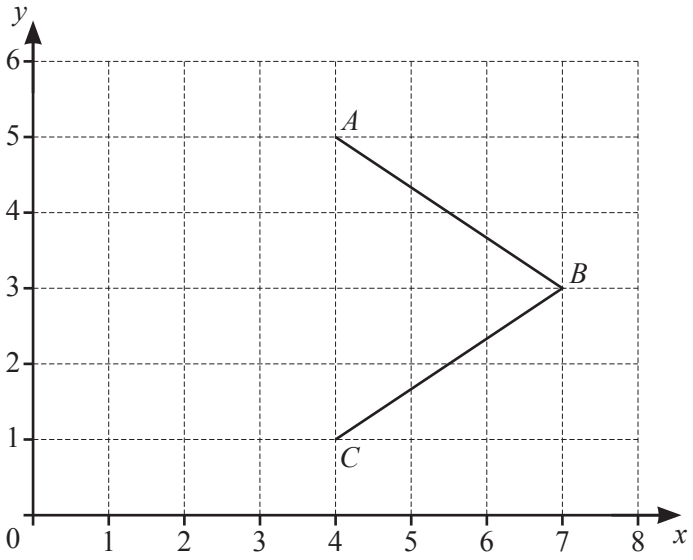
19 The mean of three numbers is 150.
The numbers are 361, $2n$ and $(n-1)$.

View solution

Find the value of n.

$n =$ ..... [3]

20



(a) Write down the co-ordinates of point B.

View solution

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

(b) The quadrilateral $ABCD$ has $x = 4$ as a line of symmetry.

View solution

On the grid, plot point D. [1]

(c) Write down the mathematical name of quadrilateral $ABCD$.

View solution

..... [1]

(d) Write down the order of rotational symmetry of quadrilateral $ABCD$.

..... [1]

View solution

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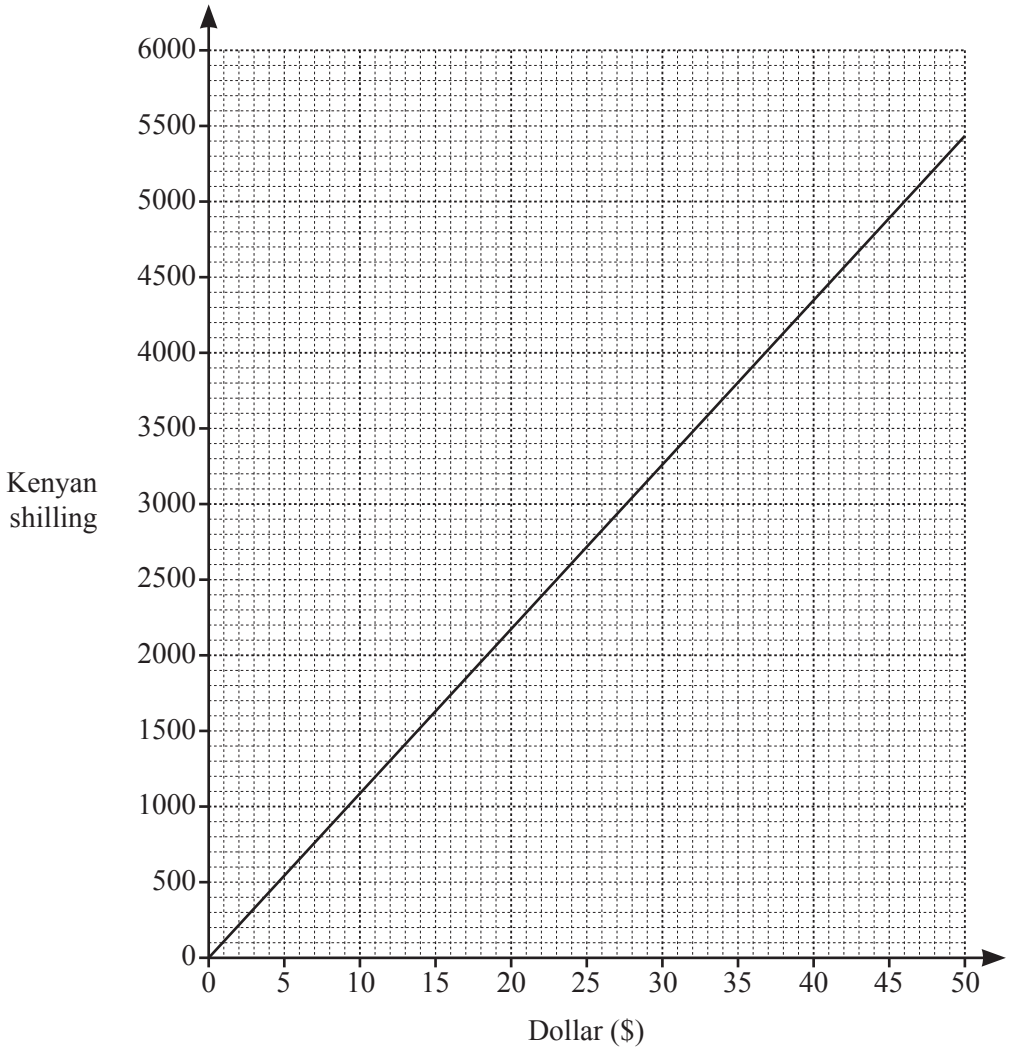
21 The diagram shows a conversion graph for dollars and Kenyan shillings.



(a) Use the graph to change 5000 shillings to dollars.

View solution

$..... [1]

(b) Explain how to use this graph to change $420 to shillings.

View solution

.....

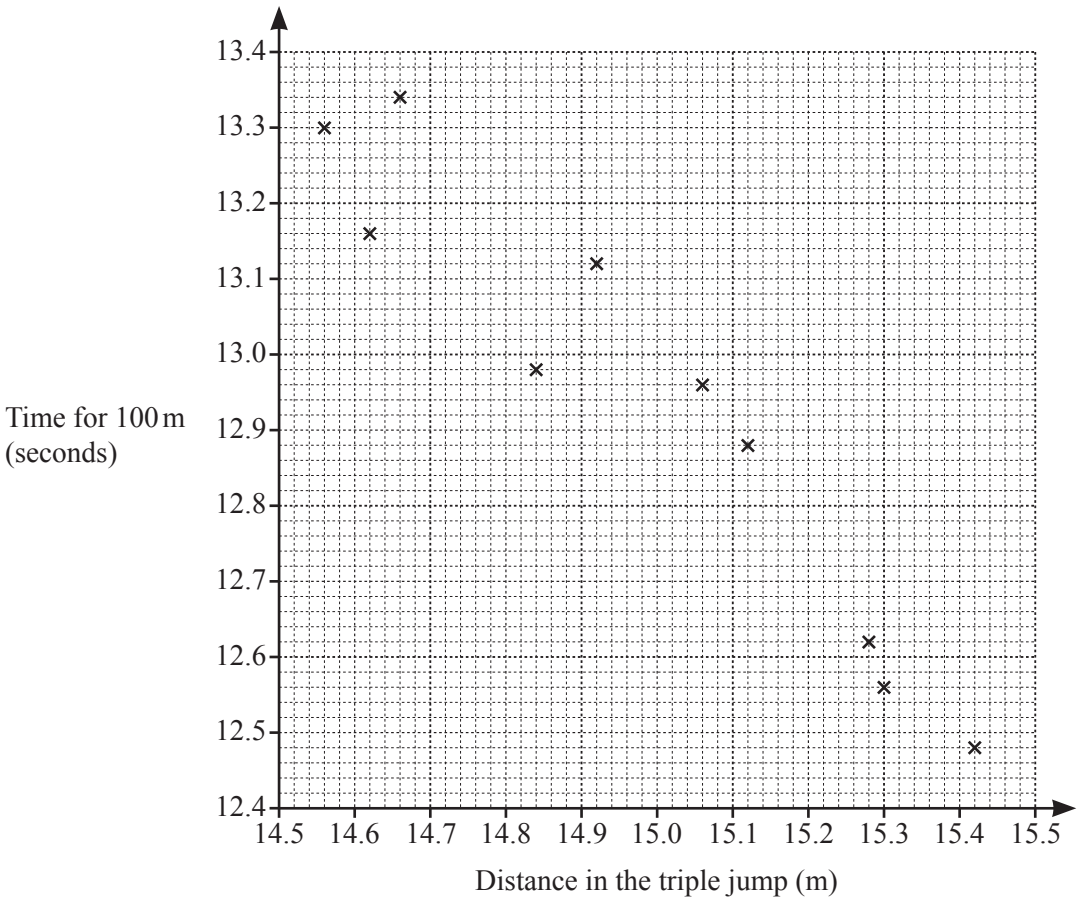
..... [1]

(c) The exchange rate is now $1 = 90 shillings.

View solution

On the grid, draw another line to show this exchange rate. [2]

22 Ten athletes compete in both the 100 metre race and the triple jump.
Their results are shown in the scatter diagram.



(a) One of these athletes jumps 15.12 m in the triple jump.

View solution

Write down his time for the 100 metre race.

..... s [1]

(b) The values for two other athletes are shown in the table.

View solution

Distance in the triple jump (m)	14.74	15.2
Time for 100 m (seconds)	13.2	12.76

On the scatter diagram, plot these points. [1]

(c) On the scatter diagram, draw a line of best fit. [1]

View solution

(d) What type of correlation is shown in the scatter diagram?

View solution

..... [1]

Question 23 is printed on the next page.

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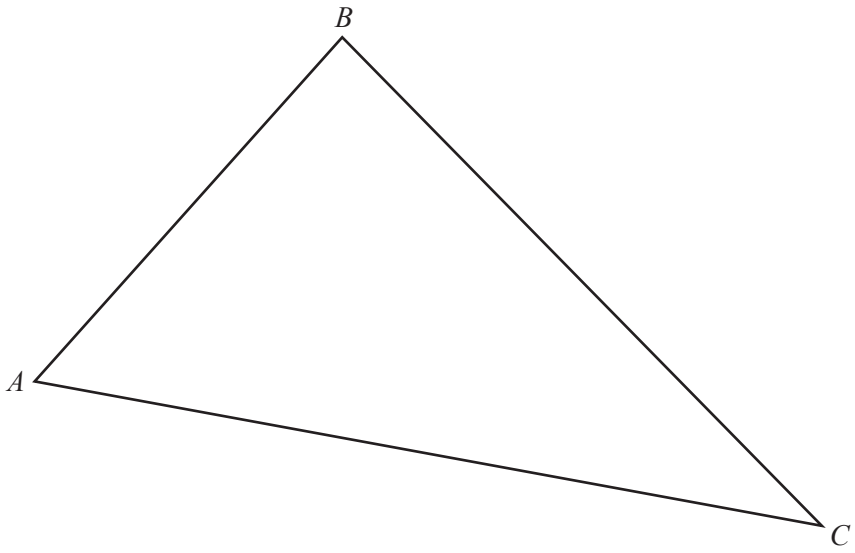
23 The scale drawing shows a triangle ABC.
The scale is 1 centimetre represents 8 kilometres.



View solution

Scale : 1 cm to 8 km

(a) **Using a straight edge and compasses only**, construct the bisector of angle BAC.
Show all your construction arcs. [2]

View solution

(b) Draw the locus of points inside triangle ABC that are 56 km from C. [2]

(c) Shade the region inside triangle ABC that is

View solution

- more than 56 km from C

and

- nearer to AC than to AB.

[1]

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