Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

MATHEMATICS **0580/12**

Paper 1 (Core) **October/November 2018**

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.

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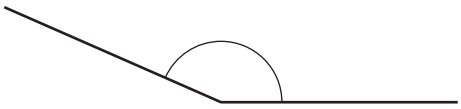

View solution

Write down the type of angle shown in the diagram.

..... [1]

2 Write down the size of one angle in an equilateral triangle.

View solution

..... [1]

3 Write 23 000 in standard form.

View solution

..... [1]

4 Work out.

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

View solution

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

(b) $7\begin{pmatrix}-3\\4\end{pmatrix}$

View solution

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

5 Expand.

$2x(3-x^2)$

View solution

..... [2]

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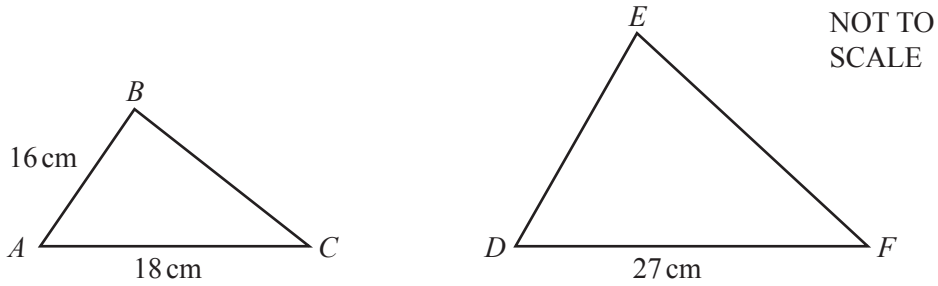
6 Triangle ABC and triangle DEF are similar.

View solution

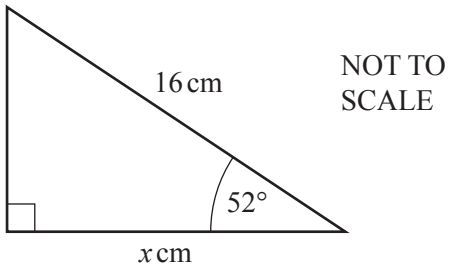


Find DE.

$DE =$ ..... cm [2]

7 The diagram shows a right-angled triangle.

View solution



Use trigonometry to calculate the value of x.

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

8 $T = a^2 + 4b$

View solution

Find the value of T when $a = 5$ and $b = 3$.

$T =$ ..... [2]

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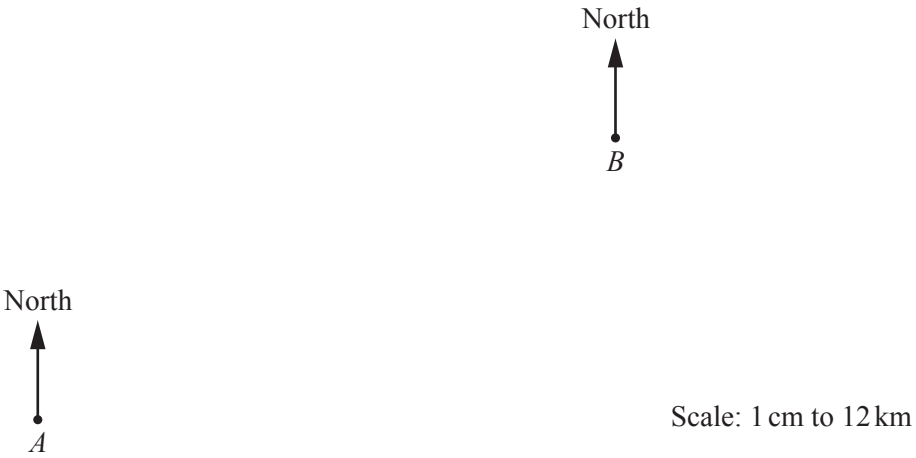
9 Complete the table.

View solution

Fraction		Percentage
$\frac{1}{4}$	=	
	=	47%
$\frac{3}{5}$	=	

[3]

10 The scale drawing shows the positions of town *A* and town *B*.
The scale is 1 centimetre represents 12 kilometres.



(a) Work out the actual distance from town *A* to town *B*.

View solution

..... km [2]

(b) Measure the bearing of town *B* from town *A*.

View solution

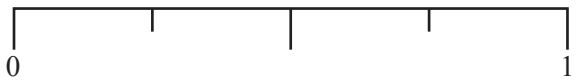
..... [1]

11 **(a)** A bag contains 6 blue counters and 2 red counters only.
A counter is taken from the bag at random.

View solution

Draw an arrow (↓) on the probability scale to show the probability of taking

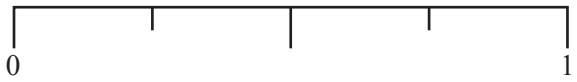
(i) a blue counter,



[1]

(ii) a yellow counter.

View solution



[1]

(b) Another bag contains green counters and black counters only.
A counter is taken from the bag at random.
The probability of taking a green counter is 0.64 .

View solution

Work out the probability of taking a black counter.

..... [1]

12 Samit invests $1800 at a rate of 4.5% per year simple interest.

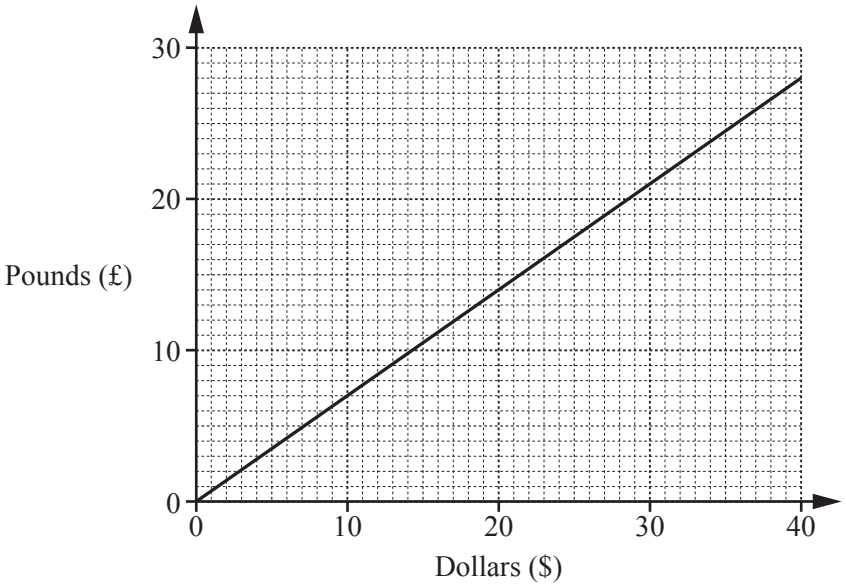
View solution

Work out the value of his investment at the end of 4 years.

$ ..... [3]

13 The diagram shows a conversion graph between pounds (£) and dollars ($).

View solution



Ana finds the same watch on sale in a shop and on the internet.
The shop price is $120.
The internet price is £90.

Use the conversion graph to find which price is lower.
Show your working clearly.

The ..... price is lower. [3]

14 **(a)** The expression for the nth term of a sequence is $5n^2$.

View solution

Work out the third term in this sequence.

..... [1]

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

View solution

$$-4 \quad 2 \quad 8 \quad 14 \quad 20$$

Find an expression for the nth term of this sequence.

..... [2]

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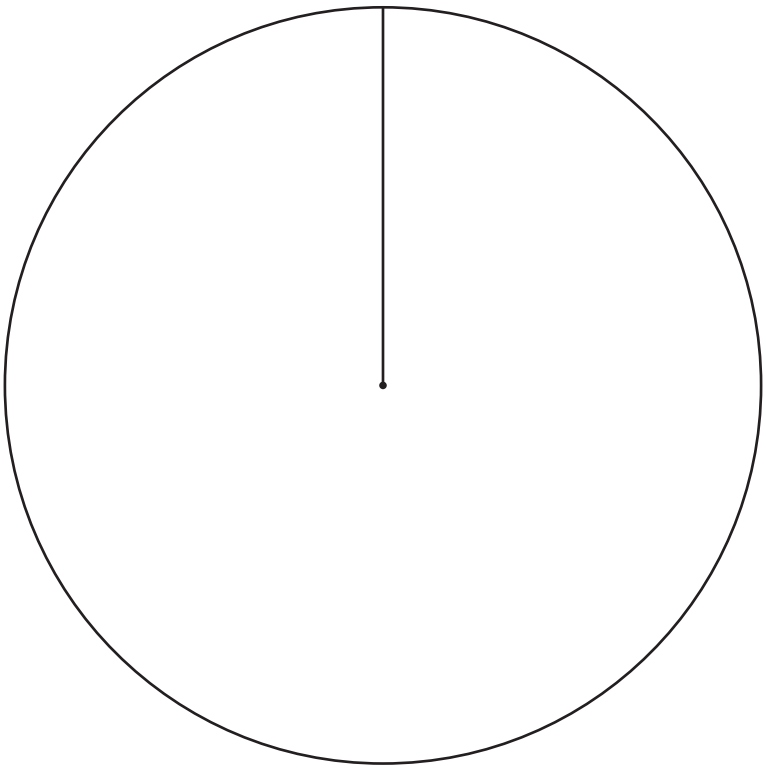
15 120 students choose what they want to do when they leave school.
Their choices are shown in the table.

View solution

Choice	Number of students
University	57
Training	45
Work	18

Complete the pie chart to show this information.
Label each sector clearly.



[4]

16 Calculate.

(a) 4.1^3

View solution

..... [1]

(b) $-4-(5^2-2\times4\times-3)$

View solution

..... [1]

(c) $\dfrac{4.88-2.36}{5.3+1.9}$

View solution

..... [1]

(d) $\sqrt{56.25}-\sqrt[3]{15.625}$

View solution

..... [1]

17 **(a)** Write 56 as a product of its prime factors.

View solution

..... [2]

(b) Find the lowest common multiple (LCM) of 56 and 42.

View solution

..... [2]

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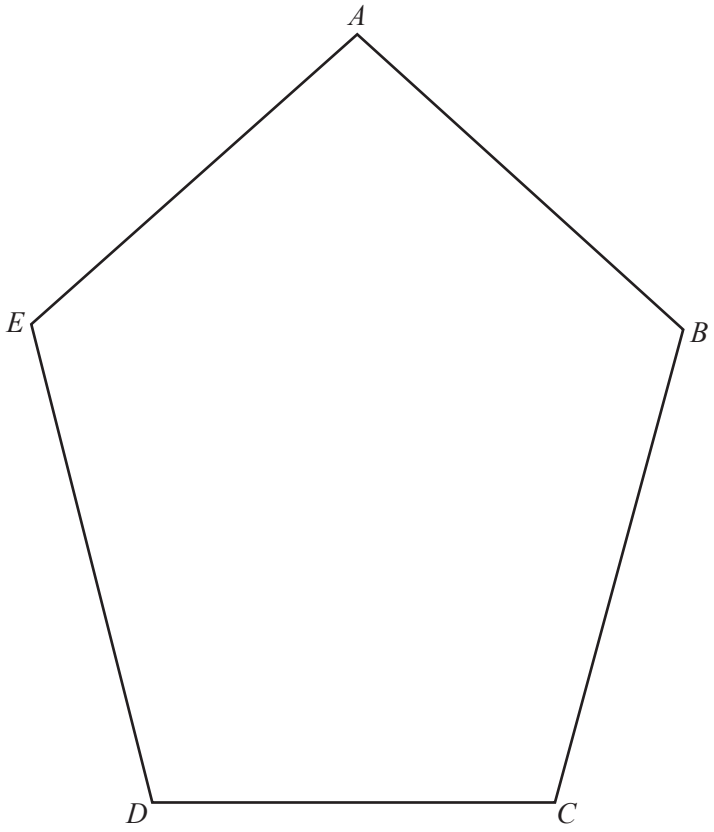
18 The diagram shows a pentagon *ABCDE*.



View solution

(a) **Using a straight edge and compasses only**, construct the bisector of angle *BCD*. [2]

View solution

(b) Draw the locus of the points inside the pentagon that are 3 cm from *E*. [1]

View solution

(c) Shade the region inside the pentagon that is

- less than 3 cm from *E*

and

- nearer to *DC* than to *BC*.

[1]

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19 Solve the simultaneous equations.
You must show all your working.

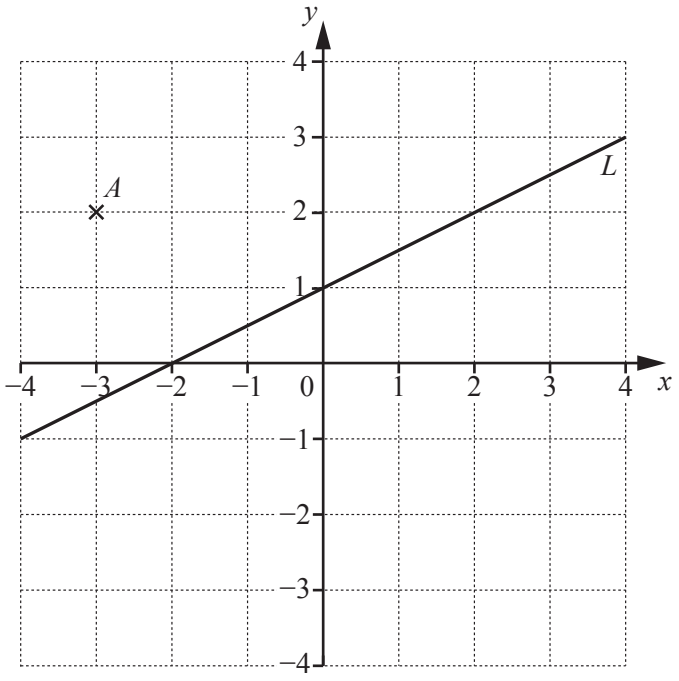
View solution

$$2x + 5y = 60$$
$$3x - 2y = 14$$

$x =$ .....

$y =$ ..... [4]

20



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

View solution

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

(b) On the grid, plot point B $(1, -3)$.

View solution [1]

(c) Find the gradient of line L.

View solution

..... [2]

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

View solution

$y =$ ..... [1]

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