Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

MATHEMATICS **0580/12**

Paper 1 (Core) **May/June 2022**

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, 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 π, use either your calculator value or 3.142.

INFORMATION

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

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1 Write the number six hundred and seven thousand five hundred and thirty-two in figures.

View solution

..... [1]

2 61 62 63 64 65 66 67 68 69

From the list of numbers, write down

(a) a square number,

View solution

..... [1]

(b) a multiple of 13,

View solution

..... [1]

(c) a factor of 186,

View solution

..... [1]

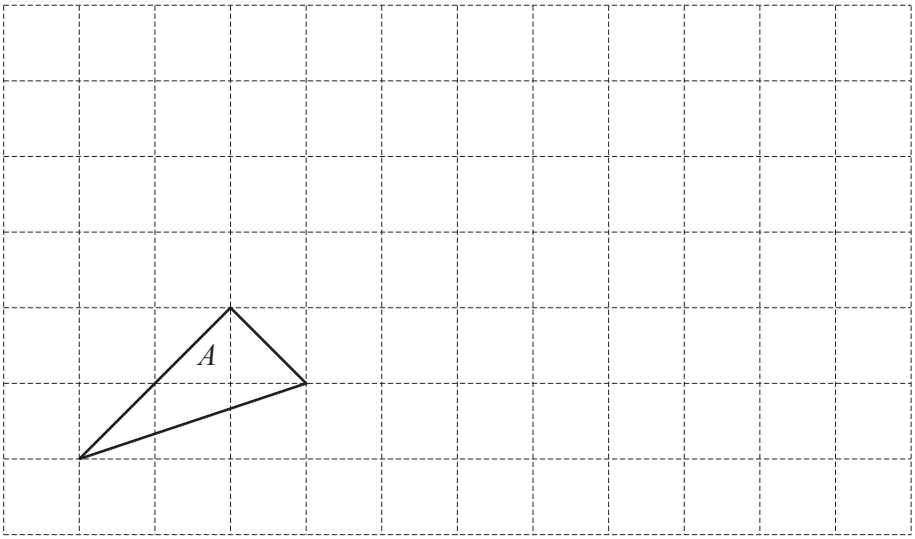
(d) the prime numbers.

View solution

..... [2]

3 On the grid, draw a triangle that is congruent to triangle *A*.

View solution



[1]

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4 The stem-and-leaf diagram shows the journey time to school of some students.

1	3	5	7	9	9
2	3	4	5		
3	0	3	4	6	7
4	2	4	5	8	

Key: 1|3 represents 13 minutes

Find

(a) the number of students with a journey time of more than 35 minutes,

View solution

..... [1]

(b) the mode.

View solution

..... min [1]

5 This is Arania's method to divide 213 by $12\frac{1}{2}$ without using a calculator.

View solution

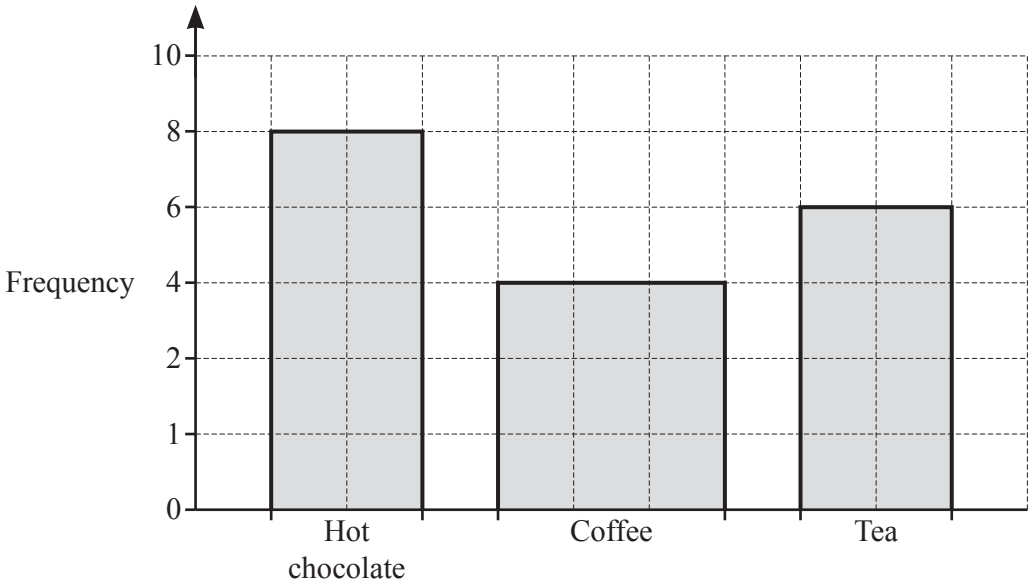
$$213 \div 12\frac{1}{2} = 426 \div 25$$
$$= 852 \div 50$$
$$= 1704 \div 100$$
$$= 17.04$$

Show how to use Arania's method to work out $135 \div 12\frac{1}{2}$ without using a calculator.

[2]

6 Sammy records the favourite hot drink of some students.
He draws a bar chart to show this information.

View solution



Write down two different reasons why his bar chart is incorrect.

1. .....

2. ..... [2]

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

(a) $6 \times 7 - 5 + 4 = 16$

View solution [1]

(b) $-2^2 + 24 \div 12 - 4 = 2$ [1]

View solution

8 At noon, the temperature is 4 °C.
At midnight, the temperature is −9 °C.

View solution

Work out the difference in temperature between noon and midnight.

..... °C [1]

9 Thibault records the number of cars of each colour in a car park.

Colour	Black	White	Silver	Red
Number of cars	8	5	4	3

View solution

(a) He draws a pie chart to show this information.

Calculate the sector angle for the red cars.

..... [2]

(b) Two more white cars enter the car park and no cars leave the car park.

When these two white cars are included in the results, will the sector angle for the red cars change?
Without doing any further calculations, give a reason for your decision.

View solution

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

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10 $\mathbf{p} = \begin{pmatrix} 2 \\ 8 \end{pmatrix}$ $\mathbf{q} = \begin{pmatrix} -1 \\ 4 \end{pmatrix}$

Find

(a) $\mathbf{p} - \mathbf{q}$,

View solution

( ) [1]

(b) $6\mathbf{p}$.

View solution

( ) [1]

11 Find the total surface area of a cuboid with length 8 cm, width 6 cm and height 3 cm.

View solution

..... cm^2 [3]

12 **(a)** The total cost of n bags of flour is $\$d$.

View solution

Write down an expression for the cost of one bag of flour.

$ ..... [1]

(b) A bag of rice costs $\$r$ and a bag of almonds costs $\$a$.
Pedro buys x bags of rice and y bags of almonds.

View solution

Write down an expression for the change that Pedro receives from a $20 note.

$ ..... [2]

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13 **(a)** Find the value of $\sqrt{68} \times \sqrt{153}$.

View solution

..... [1]

(b) Find the value of $6789^{\frac{1}{3}}$.
Give your answer correct to 2 decimal places.

View solution

..... [2]

14 Write the ratio $5 \times 10^{-1} : 2 : 3 \times 10^{1}$ in its simplest form.

View solution

..... : ..... : ..... [2]

15 The nth term of a sequence is $n^2 + 12$.

(a) Find the first three terms of this sequence.

View solution

..... , ... , ... [2]

(b) Is 5196 a term in this sequence?
Give a reason for your decision.

View solution

..... because .....

..... [2]

16 $33\frac{1}{3}\%$ π $\frac{1}{13}$ $343^{\frac{1}{3}}$ $\sqrt{3}$ 5.6×10^{-7}

View solution

Two of the numbers in this list are irrational.

Put a ring around each of these irrational numbers. [1]

17 $9^x \times 9^2 = 9^{12}$

View solution

Find the value of x.

$x =$ ..... [1]

18 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

$$\frac{27-2.3^2}{845.4\times0.048}.$$

View solution

..... [2]

19 The length, l metres, of a piece of rope is 30.7 m, correct to 1 decimal place.

View solution

Complete this statement about the value of l.

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

20 **(a)** Simplify.

View solution

$$3(2a-b)-b$$

..... [2]

(b) Factorise.

View solution

$$x^2-8xy$$

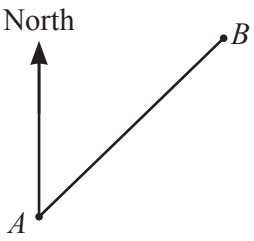
..... [1]

21 Find the lowest common multiple (LCM) of 24 and 28.

View solution

..... [2]

22



NOT TO SCALE

View solution

The bearing of B from A is 059°.

Work out the bearing of A from B.

..... [2]

23 **Without using a calculator**, work out $4\frac{1}{8} - 2\frac{5}{6}$.
You must show all your working and give your answer as a mixed number in its simplest form.

View solution

..... [3]

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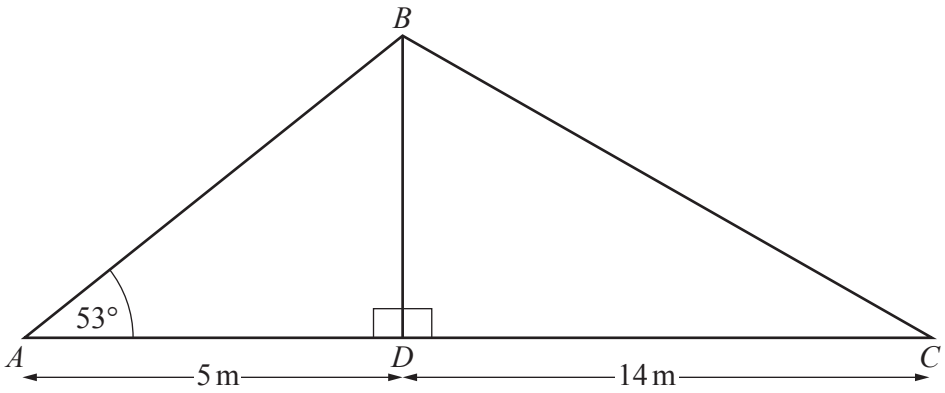
24

View solution



NOT TO SCALE

The diagram shows two right-angled triangles, ABD and BCD.
$AD = 5\,\text{m}$, $DC = 14\,\text{m}$ and angle $BAD = 53°$.

Calculate BC.

$BC =$ ..... m [4]

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