Cambridge Secondary 1 Checkpoint

Cambridge Assessment International Education
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CANDIDATE NAME

CENTRE NUMBER | | | | | |

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6959790622

MATHEMATICS **1112/01**

Paper 1 **April 2019**

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

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
NO CALCULATOR ALLOWED.

You should show all your working in the booklet.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total number of marks for this paper is 50.

This document consists of **20** printed pages.

Cambridge Assessment International Education

1 Work out the value of y.

$$6 \times 3 + y = 23$$

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

2 Blessy thinks of a number and multiplies it by 3
She then subtracts 6
Her final answer is 15

Work out the number Blessy started with.

..... [1]

3 Gabriella has 3 bottles of water.
Each bottle contains 500 ml of water.

Work out the total quantity of water.
Give your answer in litres.

..... l [1]

4 Jamila has a recipe for biscuits.

To make 12 biscuits

250 g oats
125 g butter
100 g sugar
2 tablespoons syrup

Jamila makes 36 biscuits.

Work out how much butter she needs.

..... g [1]

5 Here is a number fact.

$$\frac{3}{8} \times \frac{2}{5} = \frac{3}{20}$$

Use this to work out

$$\frac{3}{8} \times \frac{4}{5}$$

..... [1]

6 Draw a ring around the **two** numbers that are exactly divisible by 9

39 54 96 123 297 418

[1]

7 Draw a ring around the function that corresponds to the rule in the box.

multiply by 4 then subtract 2

$x \rightarrow x^4 - 2$ $x \rightarrow 4(x - 2)$ $x \rightarrow 4x - 2$ $x \rightarrow 2 - 4x$

[1]

8 Work out

12.7×0.3

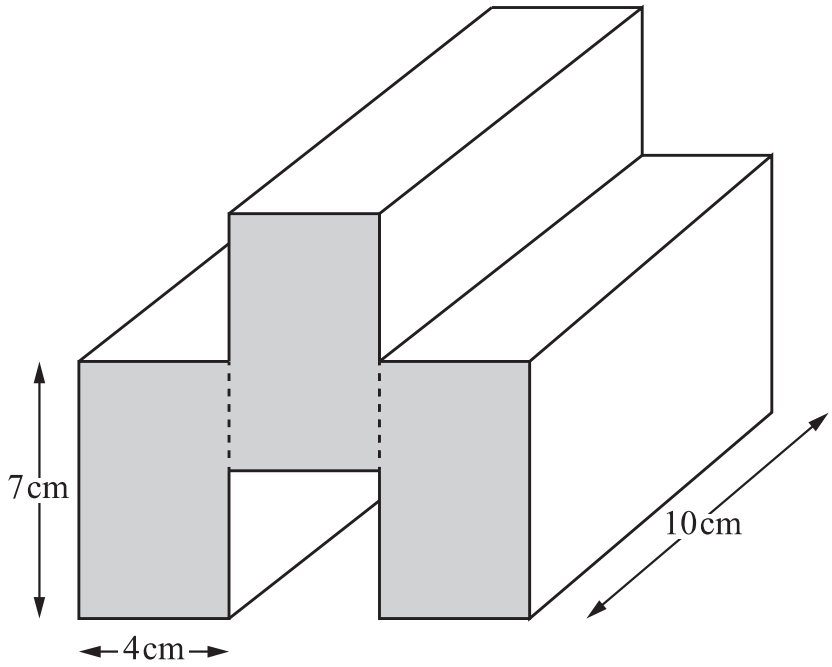
..... [1]

9 There are 30 days in November.
It rains on $\frac{3}{5}$ of them.

Work out the number of days when it does **not** rain.

..... days [1]

10 The diagram shows a prism.
The cross-section can be divided into three identical rectangles.
Each rectangle measures 7 cm by 4 cm.
The prism is 10 cm long.



NOT TO SCALE

Work out the volume of the prism.

..... cm^3 [2]

11 A shop sells two different bags of rice.

Tick (✓) to show which bag gives you more **free** rice.

Rice A ☐ Rice B ☐

You must show your working.

[2]

12 Mia and Lily are trying to find the nearest whole number to $\sqrt{120}$

Mia

Lily

Tick (✓) to show who is correct.

Mia ☐ Lily ☐

Give a reason for your answer.

.....

..... [1]

13 Write down all the primes between 60 and 70

..... [1]

14 Anastasia has four coins *A*, *B*, *C* and *D*.
One of these coins is a fair coin and the other three are biased coins.
She throws each coin 200 times and records the number of times she gets a head.

Tick (✓) the coin that is most likely to be the fair coin.

Coin *A* 49 heads	Coin *B* 142 heads	Coin *C* 110 heads	Coin *D* 68 heads
☐	☐	☐	☐

[1]

15 Choose either × or ÷ to make each calculation correct.

14 ..... 0.2 = 70

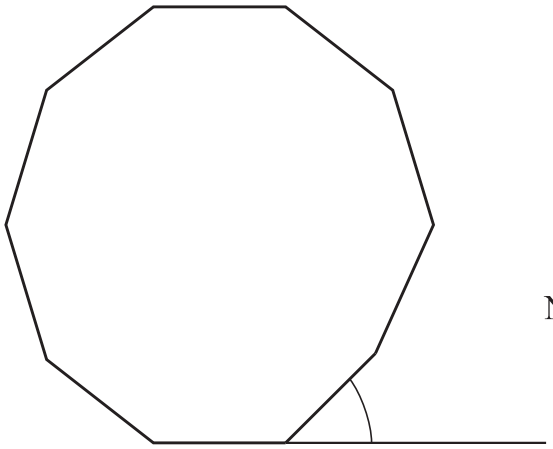
16 ..... 1.25 = 20

20 ..... 0.5 = 10

36 ..... 0.75 = 48

[2]

16 Calculate the size of each **exterior** angle of a regular 10-sided polygon.



NOT TO SCALE

.....° [1]

17 Here are the timetables for trains running from Dibside to Flaghaven and from Flaghaven to Hankberg.

	Monday to Friday						Saturdays only			
Dibside	09:06	11:06	13:06	15:06	17:06		10:06	12:36	15:06	17:36
Elmville	10:13	-	14:13	-	18:13		11:17	13:47	16:17	18:47
Flaghaven	11:32	13:24	15:32	17:24	19:32		12:40	15:10	17:40	20:10

	Monday to Friday						Saturdays only			
Flaghaven	09:40	11:40	13:40	15:40	17:40		09:30	12:30	15:30	18:30
Giyubi	09:55	-	13:55	15:55	17:55		09:45	12:45	15:45	18:45
Hankberg	10:08	12:05	14:08	16:08	18:08		09:58	12:58	15:58	18:58

(a) Oliver plans to take the 11:06 train from Dibside to Flaghaven next **Wednesday**.

Calculate how long his journey will take.

..... hours ..... minutes [1]

(b) To travel from Dibside to Hankberg, passengers must change trains at Flaghaven.

Yuri needs to travel from Dibside to Hankberg next **Saturday**.
He must be at Hankberg before 18:15

Work out the time of the **latest** train he can take from Dibside.

..... [2]

18 Each of these numbers is written as a product of prime factors.

$539 = 11 \times 7^2$ $\qquad$ $847 = 7 \times 11^2$

Use this information to write

(a) $\frac{539}{847}$ as a fraction in its **simplest form**,

..... [1]

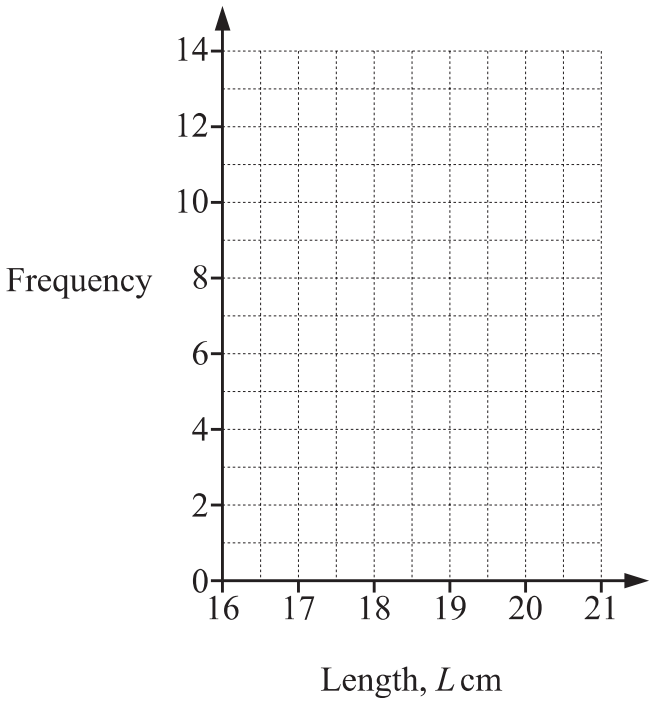
(b) $\frac{55}{539}$ as a fraction in its **simplest form**.

..... [1]

19 Rajiv measures the lengths of 40 birds.

Length, L cm	Frequency
$16 \leq L < 17$	13
$17 \leq L < 18$	8
$18 \leq L < 19$	12
$19 \leq L < 20$	4
$20 \leq L < 21$	3

(a) Draw a frequency diagram to show these lengths.



[2]

(b) Rajiv says that the median length is in the interval $18 \leq L < 19$

Tick (✓) to show if Rajiv is correct or not.

Rajiv is correct ☐ Rajiv is not correct ☐

Give a reason for your answer.

.....

..... [1]

20 Calculate the value of

$2 + 8(40 - 5)$

..... [1]

21 Chen investigates how people in his town will vote in an election.
Here are three methods he uses to collect data.

Tick (✓) the correct box to show whether each method collects **primary** or **secondary** data.

	Primary	Secondary
Ask the parents of his friends	☐	☐
Look for survey results on the internet	☐	☐
Go to the library to look up the results of the last election	☐	☐

[1]

22 Work out the missing amount in this statement.

20% of \$30 = 40% of \$ ☐ [1]

23 Here is a list of numbers.

$$-7 \qquad -5 \qquad -3 \qquad 2 \qquad 3 \qquad 6$$

Find the **largest positive** number that can be made when two numbers from this list are

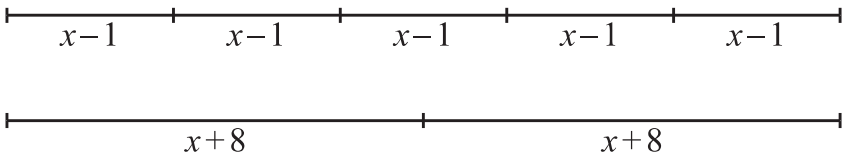
(a) multiplied together,

..... [1]

(b) subtracted from each other.

..... [1]

24 These two lines are the same length.
All measurements are in centimetres.



NOT TO SCALE

(a) Write down an equation to show that the two lines are the same length.

..... [1]

(b) Work out the length of one line.

..... cm [2]

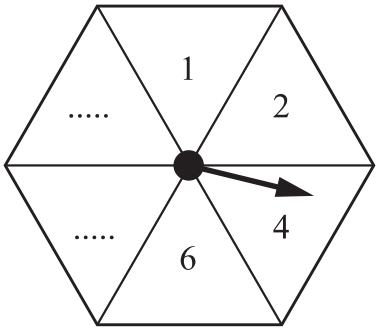
25 AB is a line segment.
M is the midpoint of AB.

A is the point (7, 2).
M is the point (5, 6).

Work out the coordinates of point B.

(....., ...) [2]

26 The diagram shows a fair six-sided spinner.
Each section is numbered.
The numbers on four of the sections are shown.



Ahmed spins the spinner twice and the scores are added.
The sample space diagram shows some of the total scores.

+	**1**	**2**	**4**	**6**	....	....
1	2	3	5	7	....	....
2	3	4	6	8	....	....
4	5	6	8	10	....	....
6	7	8	10	12	12	....
....	....	....	10	....	....	14
....	....	....	....	....	....	....

Calculate the probability that the total score is 10 or more.

..... [3]

27 Write each of these lines in the correct position in the table.

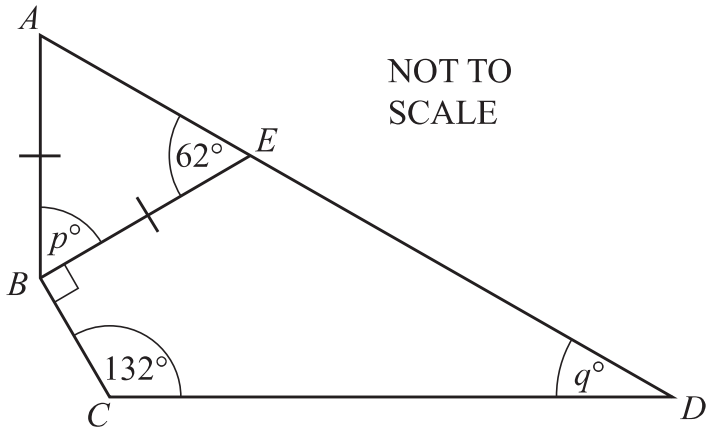
$y = 4x + 1$
$y = -1$
$y = -6x$
$x + y = 11$
$y = 3x - 5$

The first one has been written in for you.

Positive gradient	Zero gradient	Negative gradient
$y = 4x + 1$		

[2]

28 The diagram shows an isosceles triangle ABE and a quadrilateral $BCDE$.
AD is a straight line.



(a) Calculate the value of p and the value of q.

$p =$ .....

$q =$ .....
[2]

(b) Hassan says that the quadrilateral $BCDE$ is a kite.

Tick (✓) to show if Hassan is correct or not correct.

Correct ☐

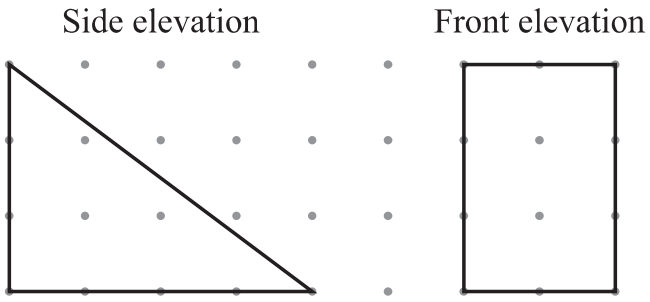
Not correct ☐

Give a reason for your answer.

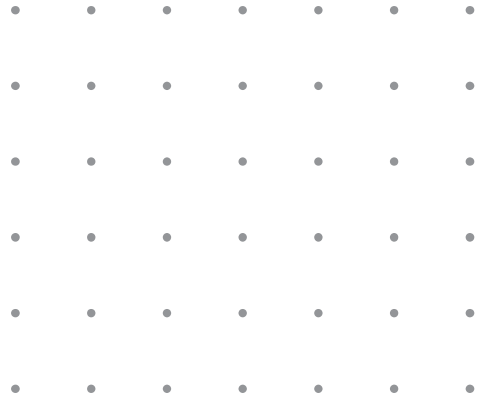
.....

..... [1]

29 Here are two elevations of a triangular prism.

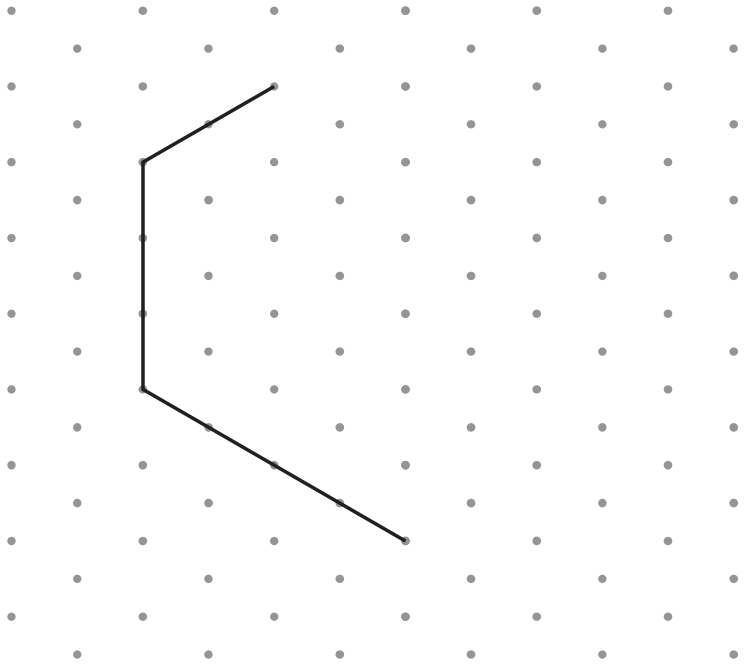


(a) Draw a plan view of the prism.



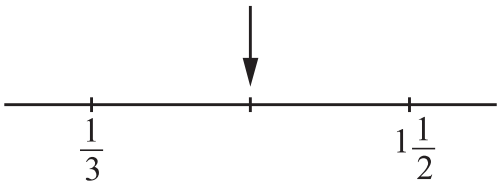
[2]

(b) This is part of an isometric drawing of the prism.



Complete the isometric drawing. [1]

30 Work out the fraction that is halfway between $\frac{1}{3}$ and $1\frac{1}{2}$



Write your answer in its simplest form.

..... [2]