Cambridge Secondary 1 Checkpoint

Cambridge International Examinations
Cambridge Secondary 1 Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

* 9 4 6 9 9 7 8 2 8 9 *

MATHEMATICS **1112/01**

Paper 1 **October 2015**

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 **14** printed pages and **2** blank pages.

1 The timetable shows the times of five buses.

Oldfield	16 00	16 20	16 35	16 50	17 05
Newton	16 21	16 41	16 56	17 11	17 26
Arden	16 39	16 51	17 14	17 21	17 44
Wiley	16 57	17 17	17 32	17 47	18 02

(a) Write down the time when the second of these buses leaves **Newton.**

..... [1]

(b) Karl arrives at the bus stop in **Arden** at 16 55
Work out how long he waits for the next bus.

..... [1]

2 Jerome has 6 number cards.

49	51	53	55	57	59

(a) Which two of Jerome's numbers are prime numbers?

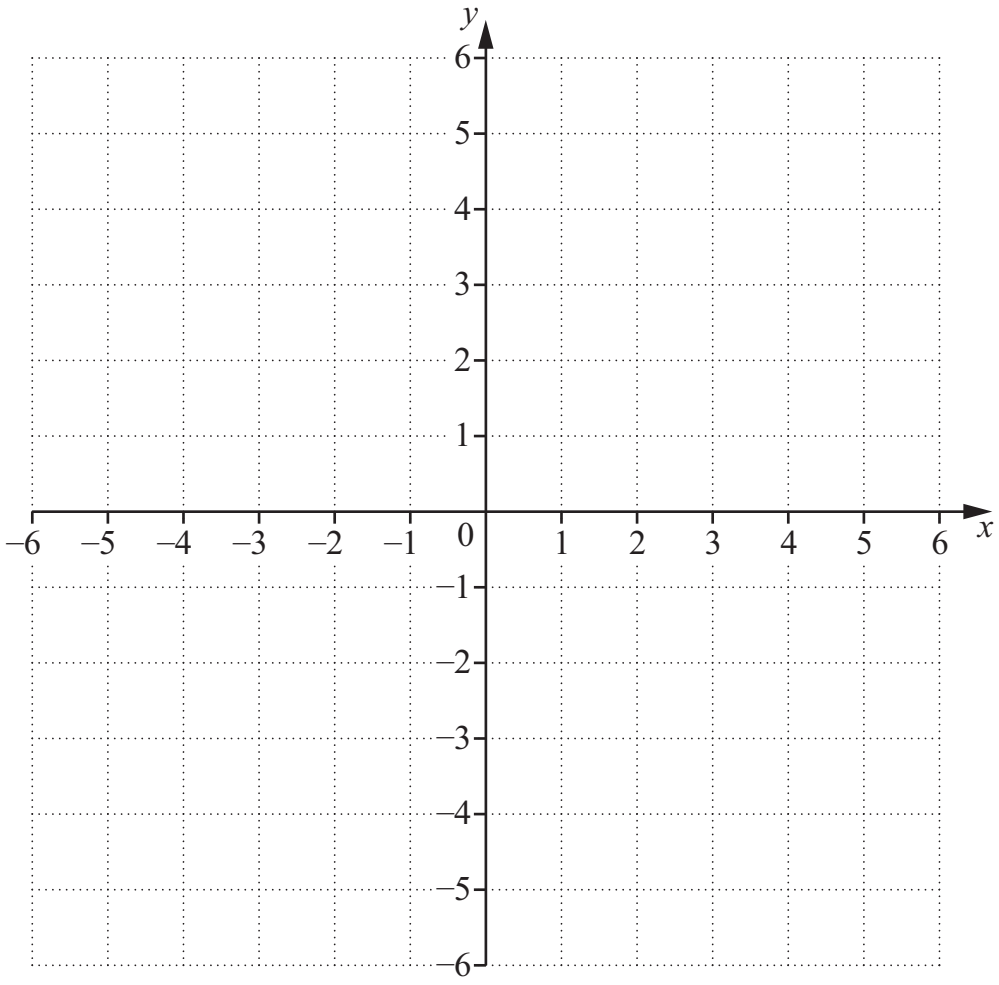
..... and ..... [1]

(b) Explain why 51 is **not** a prime number.

.....

..... [1]

3 **(a)** Plot points A (3, –1), B (3, 3) and C (–4, 2).



[1]

(b) $ABCD$ is a **parallelogram.**

Write down the coordinates of point D.

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

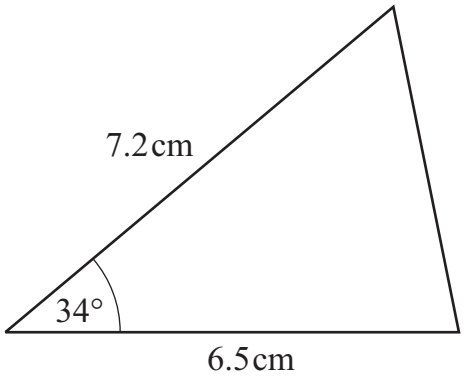
4 Put a ring around **all** the fractions that are equivalent to 0.35

$\frac{3}{5}$ $\frac{7}{20}$ $\frac{1}{3}$

$\frac{35}{100}$ $\frac{35}{10}$ $\frac{1}{35}$

[2]

5 The diagram shows a sketch of a triangle.



NOT TO SCALE

Draw this triangle accurately in the space below.
One line has been drawn for you.

6.5 cm

[2]

6 **(a)** Work out 18.6×7

..... [1]

(b) Work out $177 \div 20$

Give your answer as a mixed number.

..... [1]

7 Sarah draws a pie chart to show the time she spends on different activities one day.

Here is the table she uses.

Activity	**sleep**	**school**	**travel**	**eat**	**play**
Hours	12	5	1	2	
Pie chart angle	180°			30°	60°

Complete the table.

[1]

8 Draw a line to match each calculation to its answer.

0.7×10	0.07
70×0.01	0.7
$7 \div 0.01$	7
$7 \div 0.1$	70
	700

[2]

9 Here is a formula.

$$a = 2b - c$$

Find the value of a when

(a) $b = 11$ and $c = 3$

..... [1]

(b) $b = 12$ and $c = -4$

..... [1]

10 A boy spends $\frac{1}{4}$ of his money on sweets and $\frac{1}{3}$ on computer games.

What fraction of his money does he **not** spend?

..... [1]

11 Here is a list of eight commonly used units.

mm **cm** **m** **km** **cm^2** **m^2** **cm^3** **m^3**

Choose from the list the most suitable unit to complete each of the following sentences.

The height of a flag pole is measured in .....

The volume of water in a swimming pool is measured in .....

The area of a football pitch is measured in .....

The amount your fingernail grows in length in one month is measured in .....

[2]

12 **(a)** Express each of these functions using symbols.
The first one has been done for you.

In words	**In symbols**
Subtract 5	$x \rightarrow$ $x - 5$
Divide by 7	$x \rightarrow$ .....
Multiply by 2 and then add 1	$x \rightarrow$ .....

[1]

(b) Another function is given by

$$x \rightarrow 4(x + 3)$$

Fill in the gaps to express this function in words.

..... and then ..... [1]

13 Usain runs 5 km in 30 minutes.

How many minutes does it take him to run 8 km at the same speed?

..... minutes [2]

14 Write down the nth term for the following sequences.

(a) 4, 8, 12, 16, 20…

..... [1]

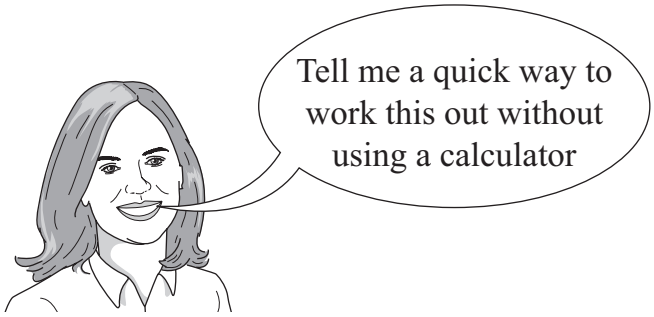
(b) 7, 10, 13, 16, 19…

..... [2]

15 A teacher wrote this sum on the board.

$$\$9.61 + \$0.39 + \$2.71 + \$5.28 + \$7.29 + \$4.72$$

She said,



Explain how to do this.

.....

..... [1]

16 Work out

$$\frac{3}{4} \div \frac{9}{10}$$

Give your answer as a fraction in its simplest form.

..... [2]

17 Solve the equation.

$$3(3 - 2x) = 2x - 11$$

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

18 Write down the **whole number** that is the best estimate for

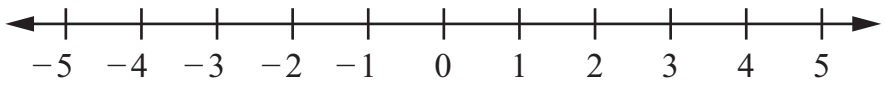
(a) $\sqrt{124}$

..... [1]

(b) $\sqrt[3]{124}$

..... [1]

19 Show the inequality $x > 3$ on the number line.



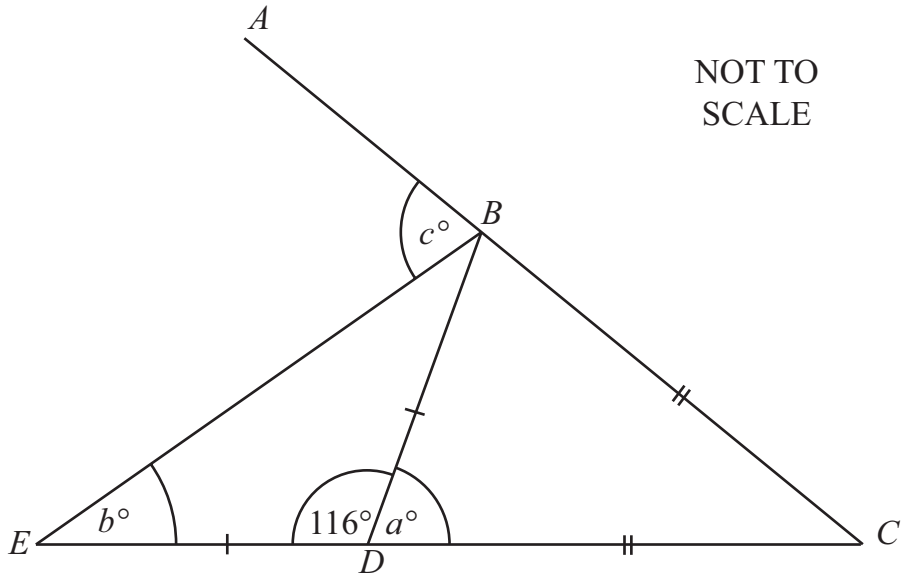
[1]

20 One US dollar is equivalent to 7.76 Hong Kong dollars.

Work out how many Hong Kong dollars are equivalent to 500 US dollars.

..... Hong Kong dollars [1]

21 The diagram shows two straight lines, *ABC* and *EDC*.



BC = *DC*
DB = *DE*
Angle *EDB* = 116°

Work out the values of *a*, *b* and *c*.

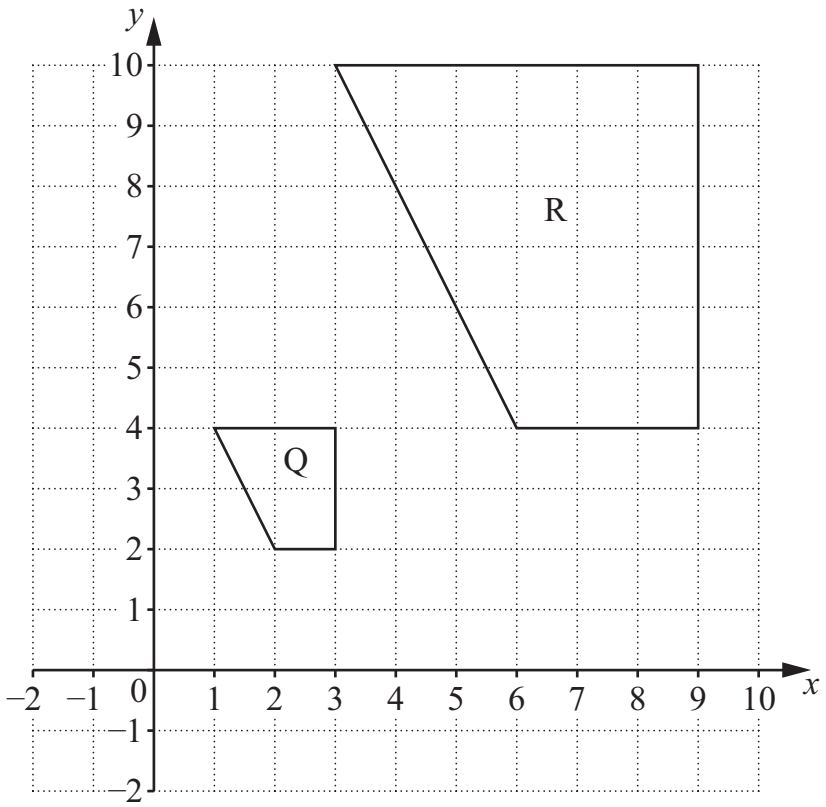
a = ...

b = ...

c = ...

[3]

22 The diagram shows two quadrilaterals, Q and R, on a grid.



Describe fully the transformation that maps quadrilateral Q onto quadrilateral R.

.....

..... [2]

23 Work out

$7.2 \div 0.15$

..... [1]

24 Nesreen wants to find out how often people in her town visit the cinema.
She collects data from 10 people standing in a queue outside a cinema.

Write down two reasons why the data she collects may **not** be reliable.

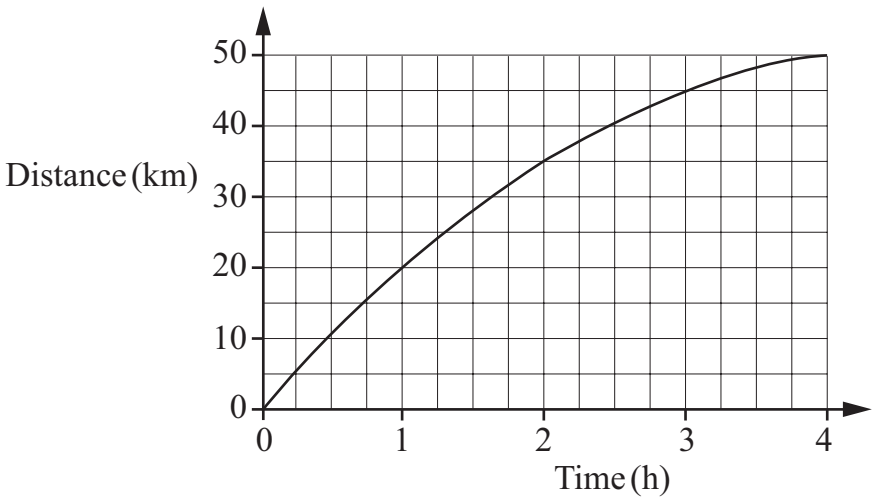
Reason 1 .....

.....

Reason 2 .....

..... [2]

25 A girl goes on a bike ride for four hours.
The graph shows her journey.



Find her average speed for the whole journey.

..... [2]

26 Syed has a six-sided dice.
His dice is numbered 1, 2, 3, 4, 5 and 6
He throws the dice 300 times.

Syed gets a 'five' 90 times.

Work out the relative frequency of throwing a 'five'.

..... [1]

27 x and y are **positive** numbers.

Here are some statements.

A	B	C	D
$x \times y > 0$	$x \times y < x$	$x \div y < y$	$x \div y < 0$

Write the letter of each statement in the correct column in the table to show whether it is

Always true or Sometimes true or Never true

The first one has been put in for you.

Always true	Sometimes true	Never true
A		

[2]

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