Cambridge Secondary 1 Checkpoint

Cambridge International Examinations
Cambridge Secondary 1 Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

MATHEMATICS **1112/01**

Paper 1 **For Examination from 2014**

SPECIMEN PAPER **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 a soft pencil for any diagrams or graphs.
Do not use staples, paperclips, highlighters, glue or correction fluid.

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 **15** printed pages and **1** blank page.

1 Put a ring around **all** the numbers that are exactly divisible by 9

3 **56** **72** **93** **146** **198**

[1]

2 Jamie has 60 counters.

He gives $\frac{1}{3}$ of his counters to Sam and $\frac{1}{4}$ to Sally.

How many counters does Jamie have left?

..... [2]

3 Erik makes a sequence of patterns using tiles.
He records how many tiles are used for each pattern number.

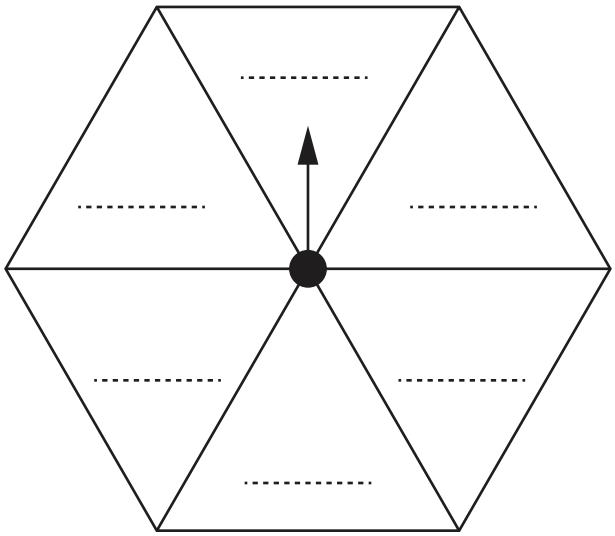
Pattern number (p)	1	2	3	4	5		
Number of tiles (t)	1	8	15	22			50

(a) Complete the table. [2]

(b) Erik finds a rule connecting the pattern number and the number of tiles.
Put a ring around the correct rule.

$t = p + 7$ $t = 6p - 1$ $t = 7p + 1$ $t = 7p - 6$ [1]

4 A fair spinner is in the shape of a regular hexagon.



(a) Write a number on each section so that the probability of getting an odd number is $\frac{1}{3}$.

[1]

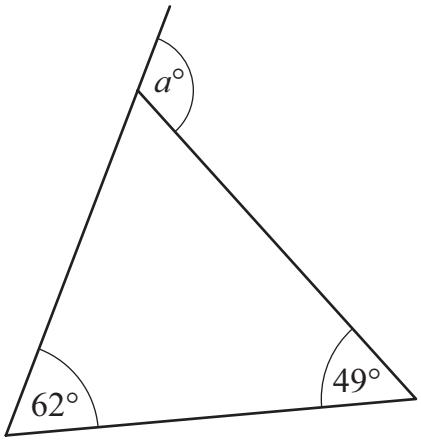
(b) What is the probability of **not** getting an odd number?

..... [1]

5 Write down the value of $\sqrt{196}$

..... [1]

6 **(a)** Work out the value of *a*.



NOT TO SCALE

a = ... ° [1]

(b) Give a geometric reason for your answer.

.....

..... [1]

7 Work out the temperature after each of these changes.

(a) The temperature starts at 6 °C and it falls by 13 °C. ..... °C [1]

(b) The temperature starts at –2 °C and it falls by 8 °C. ..... °C [1]

8 Martin is playing a game.
The probability of winning is 0.3

What is the probability of **not** winning?

..... [1]

9 Three students took a test.
The test was out of 50 marks.

David scored 38 marks	John scored half marks	Susan scored 72%

Who scored the highest?

Show your working.

..... scored the highest

[2]

10 Match each calculation with its answer.

0.7×1000	7
	70
70×0.1	700
	7000
$700 \div 0.01$	70 000

[1]

11 This table shows some outcomes from the function $x \rightarrow 2x + 3$
Complete the output column of the table.

input	output
1	5
6	
9	
15	33

[1]

12 Look at the following equation.

45.6 ÷ 1.2 = 38

Use this information to **write down** the answers to the following.

(a) $456 \div 12$ = ... [1]

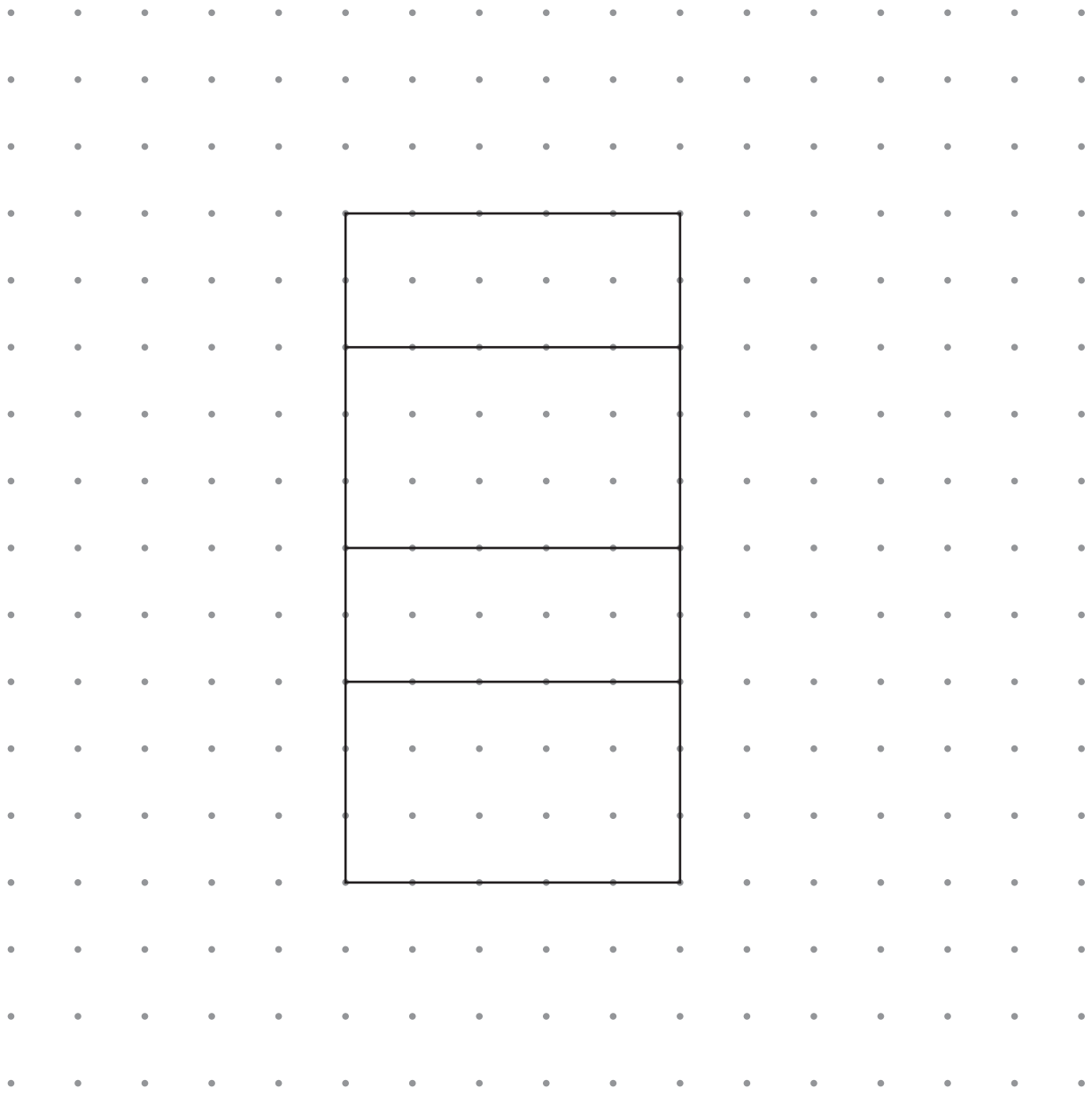
(b) 38×1.2 = ... [1]

(c) 3.8×1.2 = ... [1]

13 A cuboid has dimensions 2 cm × 3 cm × 5 cm.

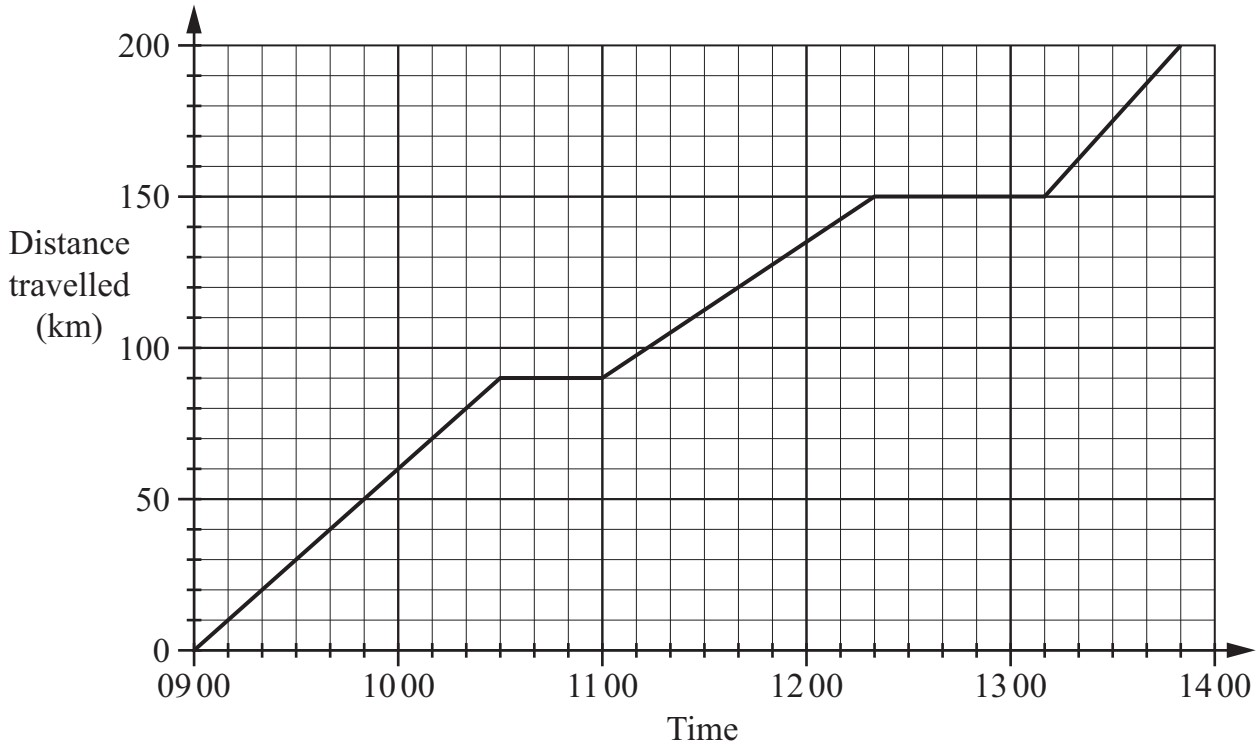
Part of the net of this cuboid is shown on the centimetre square grid.

Complete the net of the cuboid.



[1]

14 The travel graph shows Karen's journey between two towns, Springton and Watworth.



George makes the same journey between Springton and Watworth.
He leaves Springton at 10 00 and travels at a constant speed of 80 km/h without stopping.

(a) Draw a line on the travel graph to represent George's journey. [1]

(b) How much earlier than Karen did George arrive at Watworth?

..... [1]

15 Write these numbers in order of size starting with the **smallest**.

$\sqrt{25}$ 3^2 $\sqrt[3]{64}$ 0.2^2

....

smallest largest [1]

16 Work out

(a) 1.56×3.6

..... [2]

(b) $5.44 \div 1.6$

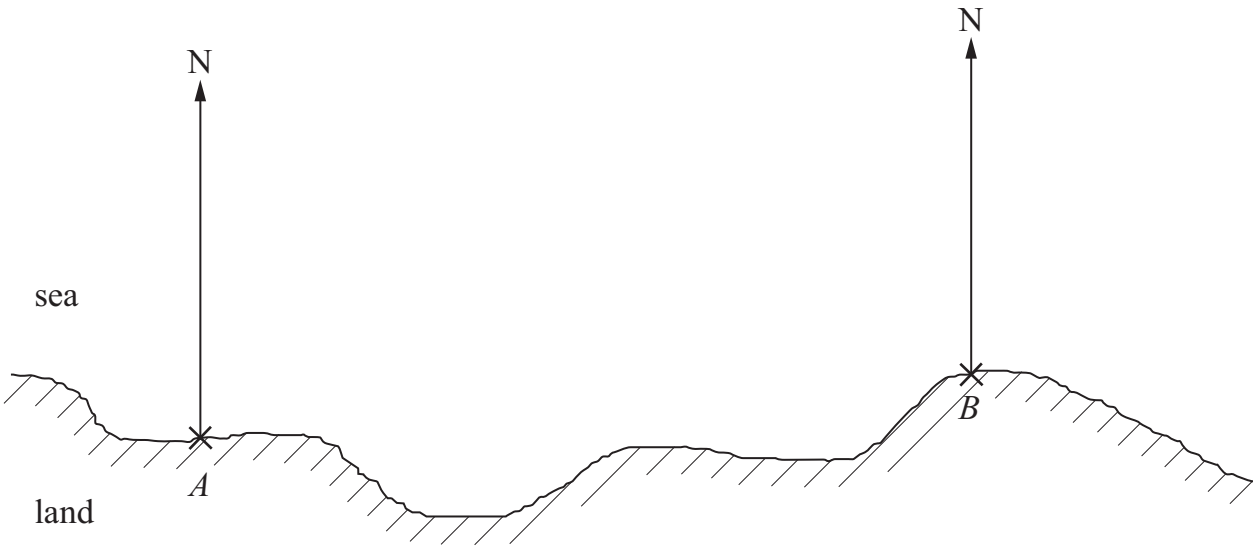
..... [2]

17 Ayako and Joshua have a total of 59 sweets between them.
Ayako has n sweets.
Joshua has 3 fewer sweets than Ayako.

Work out the value of n.

$n =$ ..... [2]

18 The map shows the positions of two beaches, A and B.



A boat is on a bearing of 062° from beach A and on a bearing of 286° from beach B.

Mark the position of the boat clearly on the map. [2]

19 Decide whether each of these statements is true or false.
Tick (✓) the correct boxes.

	True	False
$9^0 = 0$	☐	☐
$9^3 \times 9^2 = 9^5$	☐	☐
$9^8 \div 9^4 = 9^2$	☐	☐

[1]

20 Calculate

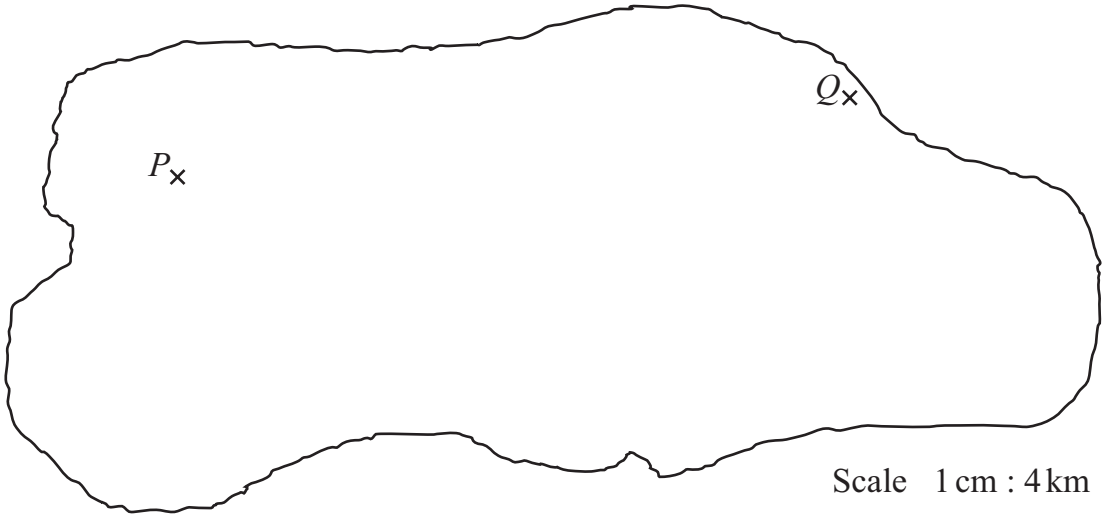
(a) $2\frac{2}{3} - 1\frac{3}{4}$

..... [2]

(b) $1\frac{1}{3} \times 2\frac{2}{5}$

..... [2]

21 The map shows an island with two towns, P and Q.
The scale of the map is 1 cm : 4 km.



The fire department wants to build a new fire station on the island.

The fire station should be
- no more than 20 km from town P
- no more than 32 km from town Q.

Shade the region on the island where the fire station could be built. [2]

22 Work out

(a) $5 + 2 \times 7$

..... [1]

(b) $4 \times (1 + 3^2)$

..... [1]

23 Here is a number line.

Tick (✓) which of these inequalities is shown on the number line.

$-2 \leq n \leq 5$ ☐

$-2 < n \leq 5$ ☐

$-2 \leq n < 5$ ☐

$5 \geq n < -2$ ☐ [1]

24 The stem and leaf diagram shows the heights, in cm, of the 15 students in class **8A** and the 15 students in class **8B**.

Class 8A						Class 8B				
		8	3	1	14 | 6				
	7	7	7	5	15 | 0	2	7		
9	9	8	6	4	16 | 1	1	3	5	8
		3	1	0	17 | 0	4	6	6	6
					18 | 2				

Key: $14 \mid 6 = 146$ cm
$1 \mid 14 = 141$ cm

(a) Find the range of heights of the students in class **8A**.

..... cm [1]

(b) Find the median of the heights of the students in class **8B**.

..... cm [1]

(c) Give **two** statements to compare the heights of the students in the two classes.

.....

.....

..... [2]

25 Ahmed buys a pack of 20 drinks to sell at the school shop.
The pack costs $5.
He wants to make a 40% profit.

How much should he sell each drink for?

$ ..... [3]

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