

CANDIDATE  
NAME

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CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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## 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.

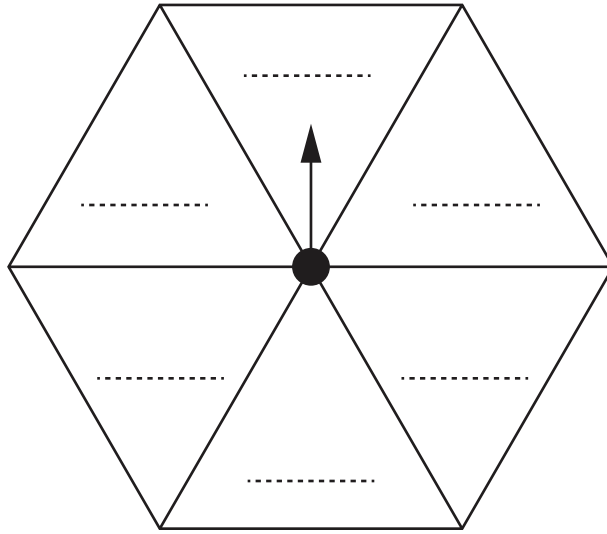
Pattern number ( $p$ )	1	2	3	4	5		
Number of tiles ( $t$ )	1	8	15	22			50

- (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]

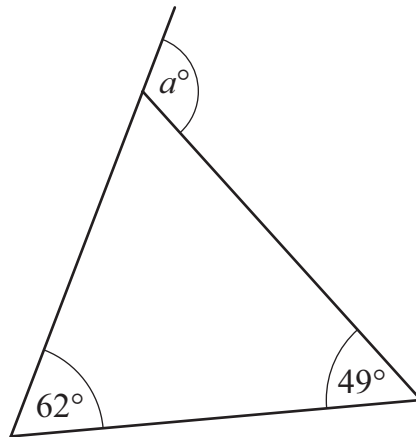
- (b) What is the probability of **not** getting an odd number?

..... [1]

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

..... [1]

- 6 (a) Work out the value of  $a$ .



NOT TO  
SCALE

$a =$  .....  $^\circ$  [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  $6^{\circ}\text{C}$  and it falls by  $13^{\circ}\text{C}$ . .....  $^{\circ}\text{C}$  [1]

(b) The temperature starts at  $-2^{\circ}\text{C}$  and it falls by  $8^{\circ}\text{C}$ . .....  $^{\circ}\text{C}$  [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.

$$0.7 \times 1000$$

7

70

$$70 \times 0.1$$

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.

$$45.6 \div 1.2 = 38$$

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

(a)  $456 \div 12 =$  .....

[1]

(b)  $38 \times 1.2 =$  .....

[1]

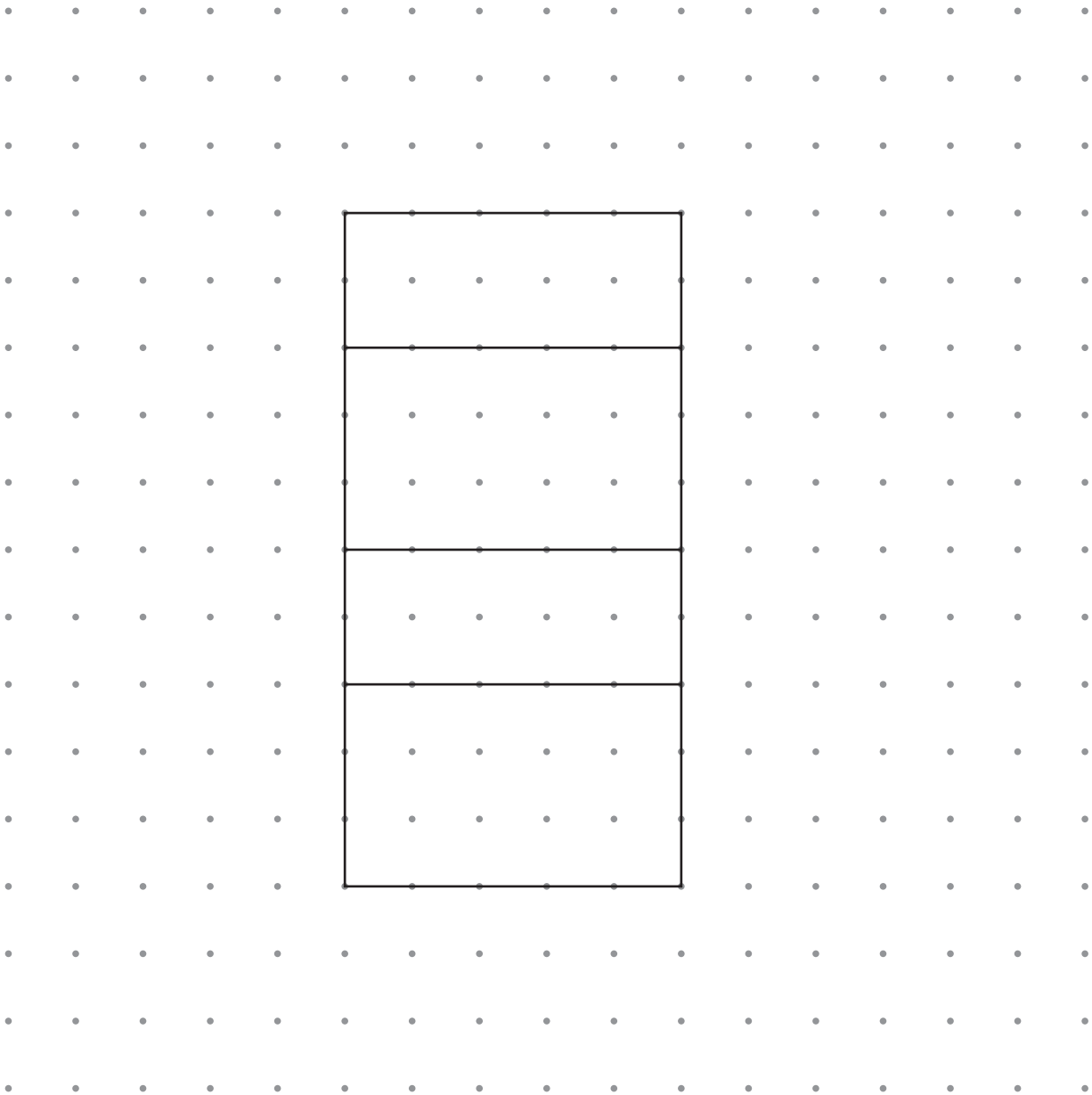
(c)  $3.8 \times 1.2 =$  .....

[1]

- 13** A cuboid has dimensions  $2\text{ cm} \times 3\text{ cm} \times 5\text{ cm}$ .

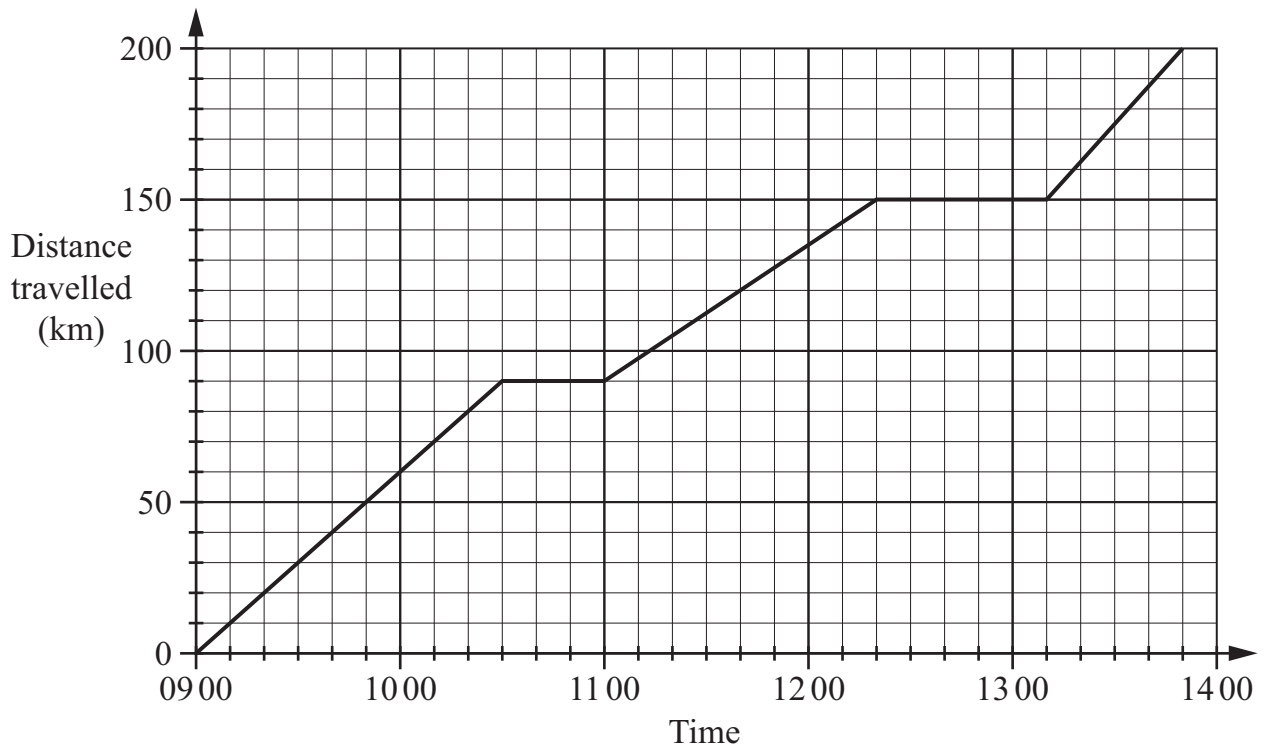
Part of the net of this cuboid is shown on the centimetre square grid.

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 1000 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)**  $1.56 \times 3.6$

..... [2]

**(b)**  $5.44 \div 1.6$

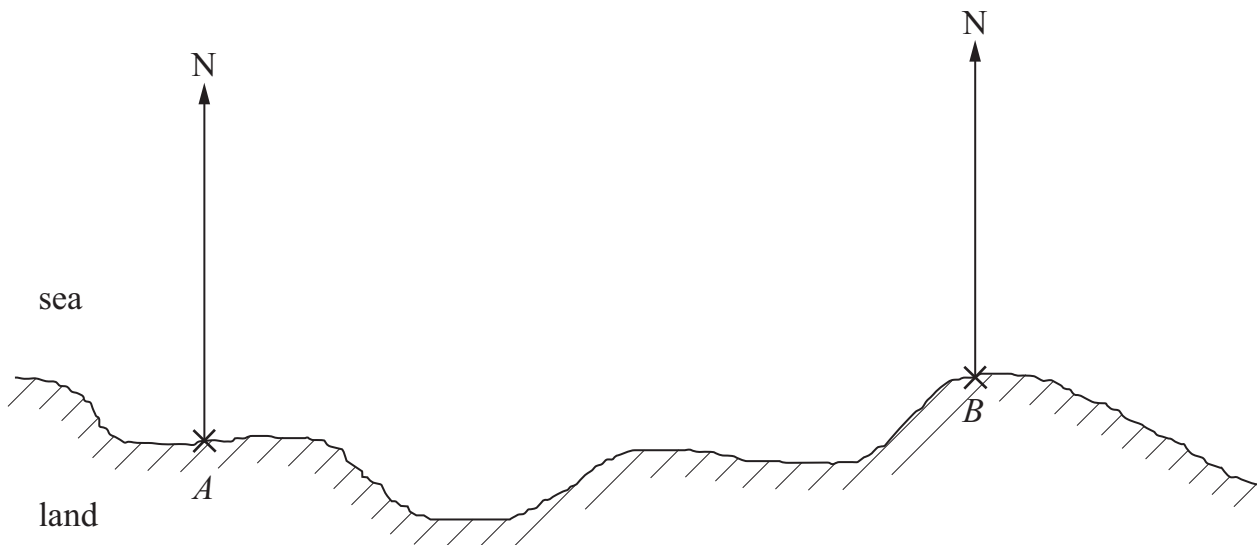
..... [2]

- 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  $062^\circ$  from beach  $A$  and on a bearing of  $286^\circ$  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
$9^0 = 0$	<input type="checkbox"/>	<input type="checkbox"/>
$9^3 \times 9^2 = 9^5$	<input type="checkbox"/>	<input type="checkbox"/>
$9^8 \div 9^4 = 9^2$	<input type="checkbox"/>	<input type="checkbox"/>

[1]

- 20** Calculate

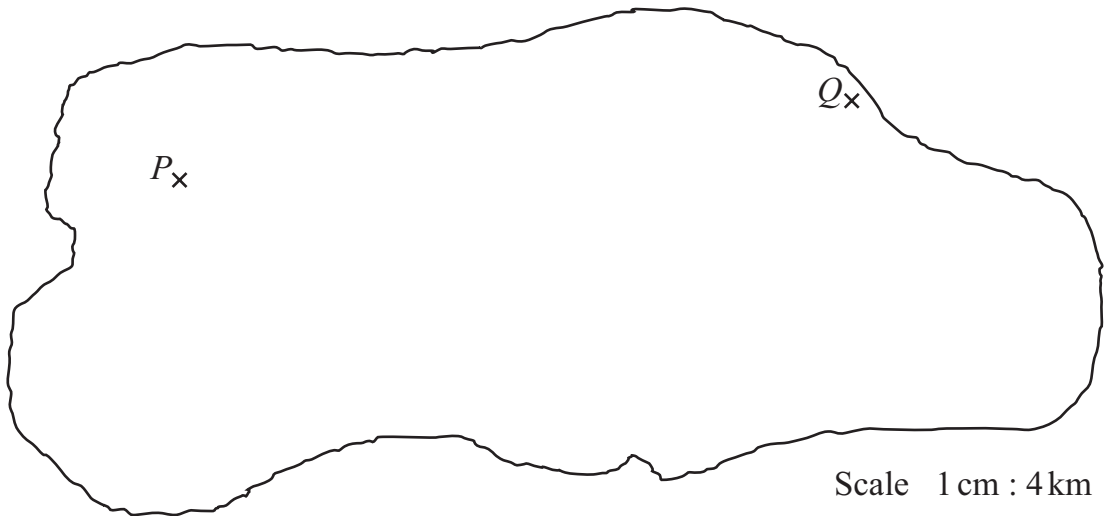
**(a)**  $2\frac{2}{3} - 1\frac{3}{4}$

..... [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 | 6 = 146 cm  
           1 | 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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