**SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009**

Directorate for Quality and Standards in Education
Educational Assessment Unit

**FORM 4** **MATHEMATICS SCHEME C** **TIME: 20 min**
**Non-Calculator Paper**

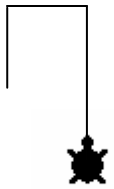
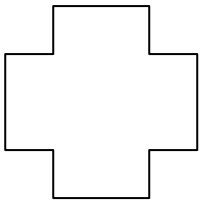
**Name:**_____ **Class:**_____

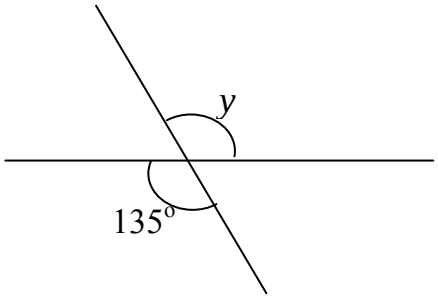
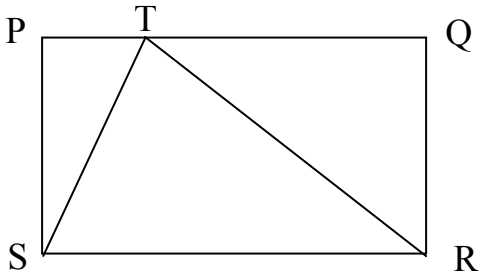
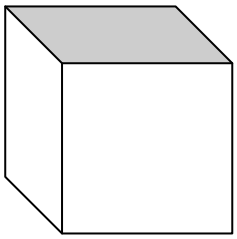
Mark

## INSTRUCTIONS TO CANDIDATES

- Answer all questions. There are 20 questions to answer.
- Each question carries 1 mark.
- Calculators, protractors and other mathematical instruments except rulers are not allowed.
- You are not required to show your working. However space for working is provided if you need it.

| No. | QUESTION | SPACE FOR WORK (IF REQUIRED) |
|---|---|---|
| 1 | Work out €24 + €32 + €16.<br>Ans _____ | |
| 2 | Choose the **largest** value from:<br>(A) 2·07 (B) 2·7 (C) 0·27 (D) 0·207.<br>Ans _____ | |
| 3 | Change 500 cent to euro. Ans _____ | |
| 4 | Write down $\frac{1}{4}$ as a percentage.<br>Ans _____ | |
| 5 | A flight from Malta to Rome takes 1h 35min.<br>An aeroplane leaves Malta at 6:15am. At what time does it arrive in Rome?<br>Ans_____ | |
| 6 | Eight students obtained the following marks in an examination: 37, 48, 51, 60, 63, 74, 80, and 88.<br>Work out the **range** for this set of marks.<br>Ans _____ | |
| 7 | Write down a **prime number** between 30 and 40.<br>Ans _____ | |
| 8 | Write down the value of $7^2$. Ans _____ | |
| 9 | Simplify: $5x - 3y - x - 2y$.<br>Ans _____ | |

| No. | QUESTION | SPACE FOR WO (IF REQUIRE |
|---|---|---|
| 10 | The turtle starts at the position shown. It draws the given figure after it is given this set of LOGO commands. Fill in the blank space with the correct command.<br><br>PD FD 100 LT 90 FD 60 _____ 90 FD 60. |  |
| 11 | There are 6 yellow marbles and 4 green marbles in a bag.<br>Patrick picks a marble at random from the bag. The probability that he picks a green marble is:<br>(A) $\frac{1}{4}$ (B) $\frac{1}{10}$ (C) $\frac{4}{10}$ (D) $\frac{6}{10}$.<br>Ans _____ | |
| 12 | The size of an angle is $200^o$. This angle is called:<br>(A) reflex (B) obtuse<br>(C) right angle (D) acute.<br>Ans _____ | |
| 13 |  <br>The order of rotational symmetry in this figure is:<br>(A) 1 (B) 2 (C) 4 (D) 8.<br>Ans _____ | |
| 14 | $7{\cdot}2 \times 2{\cdot}9 = 20{\cdot}88$. What is the value of $72 \times 29$?<br>Ans _____ | |
| 15 | A rectangle has an area of 24 $cm^2$. Write down one possible pair for the length and breadth of the rectangle.<br>Ans _____ Ans _____ | |
| 16 | Change 2·5 litres to millilitres. Ans _____ | |

| No. | QUESTION | SPACE FOR WO (IF REQUIRE |
|---|---|---|
| 17 | What is the size of angle $y$?<br>  <br><br>Ans _____ | |
| 18 | The area of rectangle PQRS is $15cm^2$.<br>What is the area of triangle RST?<br>  <br><br>Ans _____ | |
| 19 |  <br>The figure shows a cube of side 2 cm. Calculate the volume of the cube.<br>Ans _____ | |
| 20 | Given that $y = 2x - 3$, what is the value of $y$ when $x = -1$?<br>Ans _____ | |

END OF PAPER

**SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009**

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**FORM 4** **MATHEMATICS SCHEME C** **TIME: 1h 40min**

**Main Paper**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Total Main | Non Calc. | **GLOBAL MARK** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

**DO NOT WRITE ABOVE THIS LINE**

**Name:** _____ **Class:** _____

INSTRUCTIONS:
Calculators are allowed. Show all necessary working.
Answer all questions

1. a) Write one thousand five hundred and seven euro in figures.

€ _____

b) Write down 2868 correct to the nearest

(i) 10 _____

(ii) 100. _____

(4 marks)

2. a) Starting with the smallest length arrange in ascending order of size:
81·2 cm, 18·2 cm, 28·1cm, 12·8 cm _____

b) (i) Write down €82·284 correct to the nearest cent. _____

(ii) Write down 7·525 m correct to the nearest cm. _____

(4 marks)

3. a) Work out the value of:

(i) $8{\cdot}5 \times 10^4$ _____ (ii) $7{\cdot}5 \div 10^2$ _____

b) Work out the value of $y$ when $y \div 100 = 38$.

_____

(4 marks)

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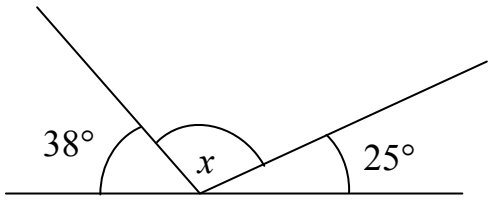
4. Calculate the values of $x$ and $y$ in the following figures.
Underline the correct reason for your answers.

a)



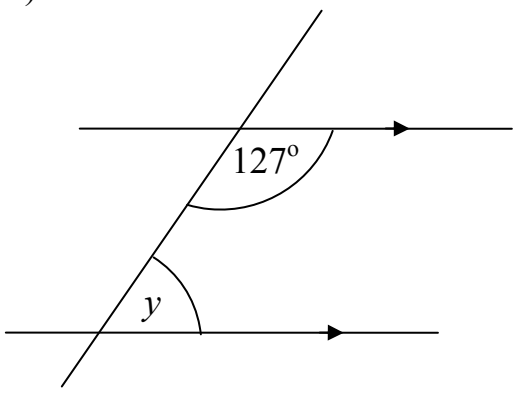

Ans $x =$ _____ °

Reason
Angles at a point add up to 360°

Angles on a straight line add up to 180°

Vertically opposite angles are equal

b)




Ans $y =$ _____ °

Reason

Alternate angles are equal

Angles on a straight line add up to 180°

Interior angles add up to 180°

Corresponding angles are equal

(4 marks)

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Name _____ Class _____

5. a) Change 350 m to cm.

_____

b) Alan walks 350 m in 7 minutes. How far does he walk in 2 minutes?
Give your answer in cm.

_____

(4 marks)

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6. Last week's temperatures were recorded as follows:
21°C, 21°C, 21°C, 22°C, 22°C, 23°C, 24°C.

a) What is the **modal temperature**?

_____

b) Work out the **mean** temperature for last week.

_____

(4 marks)

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7. A number of cars passed along a street last Saturday. The number of pe
in each car was recorded in the table below.

| Number of persons | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Number of cars | 25 | 30 | 15 | 20 | 10 |

a) What was the total number of cars that passed by?

_____

b) How many **more** cars with 2 persons than with 5 persons passed by?

_____

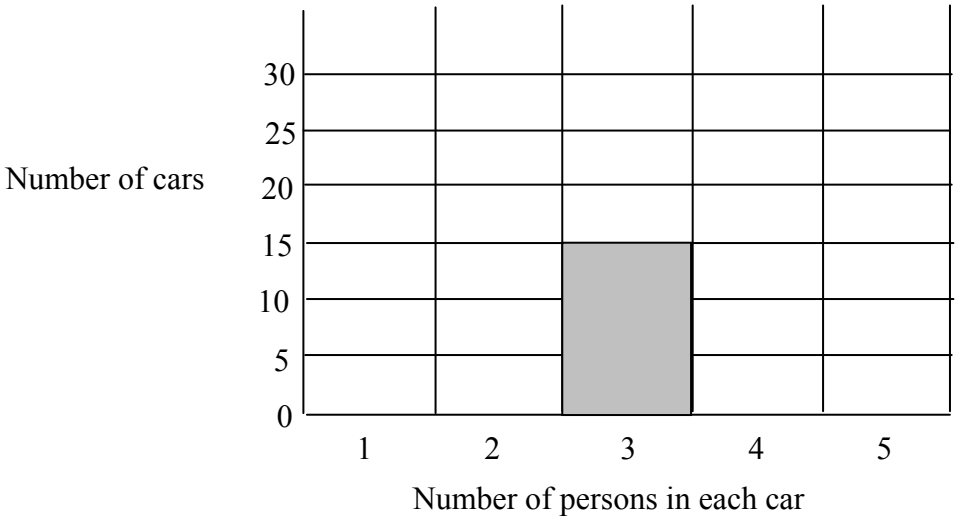
c) What percentage of the total cars had 4 persons?

_____

d) What fraction of the total cars had only 1 person?
Give your answer in the lowest terms.

_____

e) Shade the columns to complete the histogram for the data in the table.




(8 marks)

8. Solve the equations:

a) $5a + 8 = a + 56$

_____

b) $5(b - 3) = 25$

_____

c) $\frac{c}{3} = 15$

_____

(6 marks)

9. Given that $C = 2\pi r$

a) Work out the value of $C$ when $r = 6$ cm, giving your answer correct to 1decimal place.

_____

b) Make $r$ the subject of the formula.

_____

c) Work out the value of $r$ when $C = 69{\cdot}12$ m, giving your answer correct to the nearest whole number.

_____

(6 marks)

10. a) Roberta saves €25·50 in 30 days. She saves the same amount every day.
How much does she save in 1 day?

_____

b) How much **more** money does she need to have a total of €50?

_____

(4 marks)

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11. a) 35% of the candidates failed their annual examination.
What percentage of the candidates passed this examination?

_____

b) There were 20 candidates who sat for the examination.
(i) How many candidates passed the examination?

_____

(ii) How many candidates failed their examination?

(6 marks)

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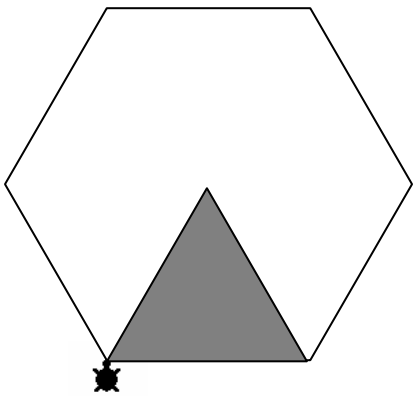
12.



(a) The figure shows a regular hexagon.
(i) What fraction of the hexagon is shaded?

_____

(ii) The area of the shaded triangle is 15·6 $cm^2$.
Calculate the total area of the regular hexagon.

_____

(iii) Write down the ratio:
shaded part : unshaded part

_____

b) The turtle followed a set of LOGO commands to travel around the shaded **equilateral triangle**. Complete the given set of commands.

PD RT 30 REPEAT ___ [FD 60 RT ____]

(8 marks)

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13. Box A contains 5 cards numbered 1, 2, 3, 4 and 5.
Box B also contains 5 cards numbered 1, 3, 5, 7 and 9.
2 cards are picked at random, one from each box.

a) Complete the possibility space to show all possible outcomes.

Box A

| Box B | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **1** | 1,1 | 2,1 | | | |
| **3** | 1,3 | 2,3 | | | |
| **5** | | | 3,5 | 4,5 | |
| **7** | | | 3,7 | | 5,7 |
| **9** | | | | 4,9 | 5,9 |

b) Use the completed possibility space to work out the probabilities that both cards show:

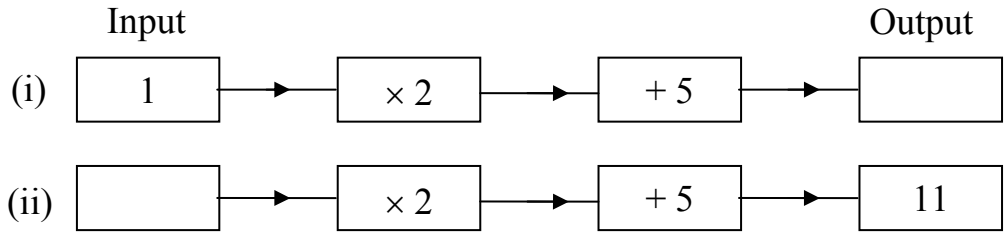
(i) square numbers _____

(ii) odd numbers _____

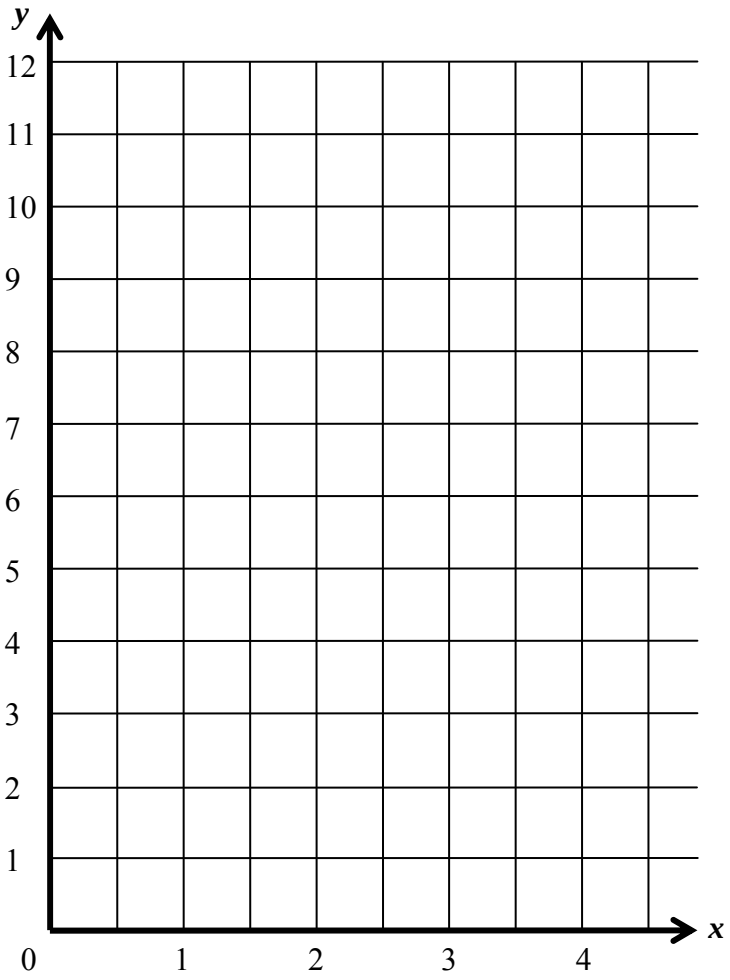
(iii) prime numbers _____

(8 marks)

14. a) Complete the following function machines.




b) On the given grid plot and join the following points (0, 5), (1, 7) and (3, 11).




c) Use your graph to find the value of $y$ when $x = 2{\cdot}5$.

_____

d) Work out the value of $x$ when $y = 21$.

_____

(10 marks)

END OF PAPER