SECONDARY SCHOOL ANNUAL EXAMINATIONS 2010
Directorate for Quality and Standards in Education
Educational Assessment Unit

FORM 4 MATHEMATICS SCHEME D
Non-calculator Paper

Time: 30 minutes

Name: _________________________________ Class: __________

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
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<th>8</th>
<th>9</th>
<th>10</th>
<th>Total</th>
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<tr>
<td>Mark</td>
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Instructions to Candidates

- Answer ALL questions.
- This paper carries a total of 20 marks.
- Calculators and protractors are not allowed.
1. Write down the **value of 5** in this number:

\[
\begin{array}{c}
0.85794 \\
\end{array}
\]

(1 mark)

2. Arrange in order of size, starting with the **smallest**.

1396 1936 169.3 1639

\[\underline{1396} \underline{1639} \underline{169.3} \underline{1936}\]

(2 marks)

3. **Subtract**:

\[
\begin{array}{c}
5000 - 3109 \\
\end{array}
\]

(2 marks)

4. **Complete** the function machine.

\[
\begin{array}{cccc}
5 & \times 8 & -6 & \\
\end{array}
\]

(1 mark)

5. Work out: \( \frac{3}{5} \times \€35 \)

\[\€ \underline{21}\]

(2 marks)
6. Use these numbers to fill in the empty spaces.

47  48  49

Even number
Square number
Prime number

(3 marks)

7. This shape is symmetrical. Work out the perimeter of this shape.

\[ \text{Perimeter} = 6.8 \, \text{m} + 4.5 \, \text{m} + 4.5 \, \text{m} + 3.2 \, \text{m} + 18 \, \text{m} \]

\[ \text{Perimeter} = 37 \, \text{m} \]

(3 marks)

8. Each side of a square is 1 cm. Find the area of the shaded shape.

\[ \text{Area} = 5 \times 5 \times 1 = 25 \, \text{cm}^2 \]

(2 marks)
9. Work out:
   a) \(29 - 5 \times 4\)  
   b) \((-20) \div 5\)  

(2 marks)

10. A school bus makes the same trip each day. In 9 days this school bus covers 441 km. Work out the length of each trip.

(2 marks)

End of Paper
Name ___________________________  Class _________

- Answer all questions.
- This paper carries 80 marks.
- Calculators and mathematical instruments are allowed but all necessary working must be shown.

1.  a) **Round** the following numbers:

   i) 12.455 correct to **2 decimal places**: __________________

   ii) 14193 correct to **nearest ten**: __________________

   b) Write as an **ordinary number**:

   \[ 7.9 \times 10^4 = \] __________________

   (4 marks)

2. **Tessellate** this shape **2 more times**:

   (2 marks)
3. a) Look at these shapes:

\[ \text{P} \quad \text{Q} \quad \text{R} \quad \text{S} \quad \text{T} \]

Fill in:

i) Shapes _____ and _____ have **only one line of symmetry**.

ii) Shape _____ has **only two lines of symmetry**.

b) The dotted lines are **mirror lines**. Complete the pattern.

(4 marks)

4. Work out the values of the angles marked \( x \), \( y \) and \( d \).

a) \[ \begin{array}{c}
66^\circ \\
\ \ \\
79^\circ \\
\ \ \\
\ x \ \\
\ y \\
\end{array} \]

\[ x = \underline{\quad} \quad \text{and} \quad y = \underline{\quad} \]

(6 marks)

b) \[ \begin{array}{c}
92^\circ \\
\ \ \\
47^\circ \\
\ \ \\
\ d \\
\end{array} \]

\[ d = \underline{\quad} \]

(6 marks)
5. a) Look at the shape.
   
   i) What fraction of the shape is shaded? Give your answer in its simplest form.
   
   ________
   
   ii) What percentage of the shape is shaded?
   
   ________%  

   b) Make equivalent fractions:  
   
   c) Work out:
   
   \[
   \frac{3}{21} = \frac{11}{21} - \frac{1}{7}
   \]

   (8 marks)

6. a) Arrange the following numbers in order largest first:

   54 54.19 54.9 54.29

   ________  ________  ________  ________

   b) Look at these patterns:

   Pattern 1  Pattern 2  Pattern 3  Pattern 4

   i) Draw Pattern 3.

   ii) Fill in:
   
   Pattern 6 has _____ black squares and _____ white squares.

   (5 marks)
7. a) Look at these shapes.

![Shapes P, Q, R](image)

**Fill in:**

i) This **net** is the net of shape _____ (P, Q, R)

ii) Shape P has 12 edges, 8 vertices and _____ faces.

b) Work out the **area** of the triangle ABC.

*Area of a triangle* = \( \frac{1}{2} bh \)

![Triangle ABC](image)

\[
\text{Area} = \frac{1}{2} \times 6 \times 7.5 = 22.5 \text{ cm}^2
\]

(5 marks)

8. Fill in the blanks using the following words. Each word can be used **only once**.

- certain
- impossible
- likely
- unlikely

a) There are 60 minutes in 1 hour. ________________

b) My father will give me €1 000 000 tomorrow. ________________

c) I am 10 years older than my mother. ________________

d) I will score more than 2 on a dice. ________________

(4 marks)
9. a) i) Simplify $\frac{24}{16}$

ii) Margaret and Frank share a 2000 $\text{ml}$ bottle of water between them in the ratio of 3 : 2.
Work out how much water each take.

Margaret: _________ $\text{ml}$
Frank: _________ $\text{ml}$

b) i) A waitress is paid €150 for 3 weeks of work.
How much does she receive for 1 week of work?

€ _________

ii) How much does she receive for 7 weeks of work?

€ _________

(10 marks)

10. a) i) Draw the hands of the clock to show 7:15 pm.

ii) Write 7:15 pm in 24-hour time. ____________

b) An aeroplane leaves Malta at 4:30 pm and arrives in Berlin at 7:15 pm.
Work out the length of the flight.

(6 marks)
11. The table and the bar graph show the number of days the students in a Form 4 class use the internet during one week.

<table>
<thead>
<tr>
<th>Number of days internet is used</th>
<th>Number of students</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td></td>
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<tr>
<td>5</td>
<td>10</td>
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<td>9</td>
</tr>
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<td>4</td>
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</table>

a) Complete the table.

b) Complete the graph.

Fill in:

c) i) The total number of students in the class is __________.

   ii) There are __________ students who use the internet for more than 5 days in a week. (6 marks)
12. a) Fill in:
Shape B is a _________________
(translation, reflection, rotation)
of Shape A.

b) Translate Shape B 3 units to the
left and 5 units down.

(4 marks)

13. a) Simplify: \[5a - 9b - 2a + 2b + 4a + 3c + 6c\]

b) Find the value of \(y\):
\[5y + 12 = 47\]

(10 marks)

c) If \(p = 3\) and \(q = 4\) find the value of: \(7p - 3q\)

d) Expand: \[4(3m - 7)\]
14. a) Fill in the table for the graph \( y = x + 2 \).

<table>
<thead>
<tr>
<th>( x )</th>
<th>(-6)</th>
<th>1</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2</td>
<td>+2</td>
<td>+2</td>
<td></td>
</tr>
<tr>
<td>( y = x + 2 )</td>
<td>-4</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

b) Use your table to plot the graph \( y = x + 2 \) on the grid.

c) Use your graph to fill in:

i) When \( x = -2 \), \( y = \) ____

ii) When \( y = 4 \), \( x = \) ____