FORM 5 MATHEMATICS SCHEME D
Non Calculator Paper

TIME: 20 minutes

Name: ________________________________
Class: __________

Instructions to Candidates

 Answer ALL questions.
 This paper carries a total of 20 marks.
 Calculators and protractors are not allowed.
1. a) Which object is made up of **most** cubes?  

Object _______  

b) How many cubes make up object A?  

__________ cubes  

(2 marks)

2. Rita has the following coins in her pocket.  

a) How much money does Rita have?  

€_____________  

b) She wants to buy a shirt costing €5.  

How much **more** money does she need?  

____________ cent  

(3 marks)
3. A bus took some students to camp.  
   It left the school at 10:15 am.  
   The trip took one and a half hours.  
   At what time did the bus get to the camp?  

\[ \underline{\text{______ : ______ am}} \]  
\[ \text{(1 mark)} \]

4. **Reflect** the triangle in the y-axis.

![Graph with a triangle reflected in the y-axis]

\[ \text{Median} = \underline{\text{_______}} \text{years} \]  
\[ \text{(1 mark)} \]

5. The following are ages (in years) of a group of athletes.  
\[ 15, \quad 18, \quad 20, \quad 22, \quad 26 \]

What is the median age?
6. A bag of 4 apples costs €2.00.
   a) Work out the cost of one apple.

   Cost = __________

   b) How many apples can be bought with €7.50?

   _______ apples
   (3 marks)

7. Sandra spins these arrows.

   a) Which arrow is most likely to land on a 3?

   Arrow _______

   b) With arrow C the probability of getting a 2 is:

   _______
   (2 marks)
8. **Fill in** the missing input/output machines.

   a) 
   \[
   \text{INPUT} \quad 4 \quad \rightarrow \quad \times 2 \quad \rightarrow \quad -5 \quad \rightarrow \quad \text{OUTPUT}
   \]

   b) 
   \[
   \text{INPUT} \quad 12 \quad \rightarrow \quad \div 4 \quad \rightarrow \quad +7 \quad \rightarrow \quad \text{OUTPUT}
   \]

   c) 
   \[
   \text{INPUT} \quad \rightarrow \quad \times 3 \quad \rightarrow \quad -1 \quad \rightarrow \quad \text{OUTPUT} \quad 11
   \]

   (3 marks)

9. This fuel gauge shows the amount of petrol in the tank.

   a) About how many litres of petrol are there in the tank?

   \[
   \underline{\text{_______}} \text{litres}
   \]

   b) How many litres are there in the tank when full?

   \[
   \underline{\text{_______}} \text{litres}
   \]

   (2 marks)
10. \( \text{NOVEMBER 2013} \)

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
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<td>26</td>
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<td>28</td>
<td>29</td>
<td>30</td>
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</tbody>
</table>

**Complete** the following using the calendar above.

a) John goes for football training every **Tuesday** and **Friday**.
   During this month he will have ________ training sessions.

b) John celebrates his birthday on 26 **October** 2013.
   This day will be a ________________.

\( \text{(2 marks)} \)

**END OF PAPER**
FORM 5 MATHEMATICS SCHEME D
Main Paper

TIME: 1h 40min

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Main</th>
<th>Non Calculator</th>
<th>Total</th>
</tr>
</thead>
</table>

Name: ___________________________     Class: __________

Instructions to Candidates

- Answer ALL questions.
- This paper carries a total of 80 marks.
- Calculators are allowed. Show all necessary working.

1. a) Write three thousand five hundred and eighty six as a number.
   
   ___________

   b) Use your calculator to work out the value of:

   i) \[25.4 - 11 \times 3\] = ____________.

   ii) \[5^2 + 2^3\] = ____________.

   iii) \[7.5 \div (-4 - 11)\] = ____________.

   (4 marks)
2.  a) Arrange these decimals in **ascending** order (smallest to largest).

\[
\begin{align*}
1.305 & \quad 13.5 & \quad 13.05 & \quad 1.35 & \quad 0.1305 \\
\end{align*}
\]

b) **Round** these numbers as indicated in the brackets.

i) \(7.625\) (correct to 1 decimal place) \(= \) ________

ii) \(48.67\) (to the nearest whole number) \(= \) ________

iii) \(523.8\) (to the nearest 10) \(= \) ________

(6 marks)

3. Mark has 5 dogs and a 15 kg bag of dog food. Each dog eats **100 g** of dog food **each day**.

   **Fill in.**

   a) Mark needs ________ g of dog food **each day** to feed his dogs.

   b) 1 kg of dog food will last for ________ days.

   c) The 15 kg bag of dog food will last for ________ days.

(3 marks)

4. **Match** fractions with decimals and percentages using **arrows** as shown.

(3 marks)
5. Alex is making this brick pattern.

![Pattern 1](image1)  ![Pattern 2](image2)  ![Pattern 3](image3)  ![Pattern 4](image4)

a) **Draw** pattern 4 in the space provided above.

b) **Fill in** the table below.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bricks Used</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

c) **Pattern 8** is made up of ________ bricks.

d) Alex needs 19 bricks to make pattern ________.

(6 marks)

6. **Movie Cinema** has the following **film** program.

<table>
<thead>
<tr>
<th>FILM</th>
<th>STARTS AT</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pirates</td>
<td>10:30 am</td>
<td>3:30 pm 1 hour 35 minutes</td>
</tr>
<tr>
<td>A School Story</td>
<td>10:00 am</td>
<td>4:00 pm 2 hours 50 minutes</td>
</tr>
<tr>
<td>Lost on an Island</td>
<td>10:40 am</td>
<td>4:30 pm 1 hour 40 minutes</td>
</tr>
<tr>
<td>The Old House</td>
<td>11:45 am</td>
<td>4:45 pm 2 hours</td>
</tr>
</tbody>
</table>

a) Mark arrives at the cinema at 10:50 am. Which morning **film** can he watch? __________________________

b) At what **time** does the last movie show end? 

_____:______ pm

c) Sara arrives at the cinema at 1:00 pm. Her mother will pick her up at 3:00 pm. Which **movie** can Sara watch from start to finish? __________________________

(6 marks)
7. A rectangular field is \((2x - 3)\) m long and \(x\) m wide.

a) **Complete** the expression for the perimeter of the field.

\[ P = 2x - 3 + x + \text{___________________________} \text{ m} \]

b) **Simplify** the expression in question (a).

\[ \text{___________________________} \text{ m} \]

c) The **perimeter** of the field is 36 m.

**Complete** the equation and **solve** it to find the value of \(x\).

\[ \text{___________________________} = 36 \]

\[ x = \text{__________} \text{ m} \]

d) Use your answer in question (c) to work out the **length** of the field.

\[ \text{_________} \text{ m} \]

(7 marks)

8. Alison has a euro **coin** and a **dice**.
She first tossed the coin.

a) i) **What is the probability** of getting heads?

\[ \text{_________} \]

ii) Alison tosses the coin 60 times.

**Estimate** the number of heads Alison is likely to get.

\[ \text{_________} \]

Alison then throws the dice shown.

b) i) **Which of the following is more likely to occur?**

Underline the correct answer. Getting a:

- a prime number
- a square number

ii) **Give a reason for your answer.**

\[ \text{__________________________________________________________________________} \]

\[ \text{__________________________________________________________________________} \]

(7 marks)
9. On the graph below, plot the points: A (-4, -2), B (0, 0) and C (8, 4).

a) Join the points to form a line.

![Graph with points A, B, and C plotted]

b) Write down the coordinates of point D.

D = (_____, ____)

c) Work out the gradient of the line.

Gradient = __________

d) Underline the correct equation of the line.

\[ y = 2x + 4 \]  \[ y = \frac{1}{2}x - 2 \]  \[ y = \frac{1}{2}x \]

(7 marks)

10. a) Petra filled a beaker with an amount of water.

**Fill in.**

i) The beaker has _______ ml of water.

ii) The beaker has _______ l of water when full.

iii) With another _______ ml of water the beaker will be full.

![Beaker image]
b) **Complete** the table below showing **working** and **answer**.

<table>
<thead>
<tr>
<th>SHAPE</th>
<th>PERIMETER</th>
<th>AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2 cm</td>
<td>____ cm</td>
<td>____ cm²</td>
</tr>
<tr>
<td>6 cm 10 cm</td>
<td>____ cm</td>
<td>____ cm²</td>
</tr>
</tbody>
</table>

(9 marks)

11. **Fill in** below.

- Triangle _____ is a **reflection** of triangle T in the y-axis.
- Triangle D is an **enlargement** of triangle T by scale factor _____.
- Triangle _____ is a **rotation** of triangle T by _____° about the origin.
- Triangle B is a **translation** of triangle T by _____ squares right and 8 squares ________.

(6 marks)
12. **Work out** the angles marked with a letter in the diagrams. **Show** all the working.

**Note:** Diagrams are not drawn to scale.

a) 

\[ \angle 115^\circ \quad m^\circ \]

\[ m = \text{______}^\circ \]

b) 

\[ \triangle \text{ with angles } 75^\circ, d^\circ, \text{ and } e^\circ \]

\[ d = \text{______}^\circ \]
\[ e = \text{______}^\circ \]

c) 

\[ \text{Quadrilateral with angles } 95^\circ, 80^\circ, 75^\circ, \text{ and } h^\circ \]

\[ h = \text{______}^\circ \]

(6 marks)
13. The table shows the **food items** sold from the tuck shop.

<table>
<thead>
<tr>
<th>Food</th>
<th>Pea Cake</th>
<th>Cheese Cake</th>
<th>Sausage Roll</th>
<th>Cheese Pie</th>
<th>Meat Pie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>7</td>
<td>16</td>
</tr>
</tbody>
</table>

a) **Complete** the bar chart below to represent this information.

![Bar Chart]

b) **Fill in.**

i) The total number of food items sold at the tuck shop is ________.

ii) The most popular food is ________________.

iii) The total number of pies sold is ___________.

iv) The tuck shop sold _______ more cakes than pies.

v) The shop sold twice as many ____________ as ________________.

__________________________  (10 Marks)

**END OF PAPER**