Annual Examinations for Secondary Schools 2014

FORM 2 MATHEMATICS TIME: 30 minutes
Non Calculator Paper

<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>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

DO NOT WRITE ABOVE THIS LINE.

Name: ________________________________  Class: ____________

**Instructions to Candidates**

- Answer all questions.
- This paper carries a total of 25 marks.
- Calculators and protractors are NOT ALLOWED.
1. Fill in. \[
\square + 6 = 11
\]
(1 mark)

2. a)
\[
\begin{array}{c}
A
\\
B
\\
C
\end{array}
\]

Underline the correct answer:

Angle ABC is about (i) 30° (ii) 90° (iii) 120°.

b) Work out angle XYP.
\[
\begin{array}{c}
P
\\
Y
\\
Q
\end{array}
\]

Answer: __________°
(3 marks)

3. Work out:

a) \[6.8 + 3.1 = \] __________

b) \[8.6 - 2.3 = \] __________

c) \[9.5 \times 10 = \] __________

d) \[7.7 \div 10 = \] __________

(4 marks)
4. a) What fraction is shaded?

![Fraction Diagram]

Answer: ______  ______  ______

b) Underline the correct answer.

\[ \frac{1}{2} \text{ is equal to } \frac{3}{5}, \frac{3}{4}, \frac{5}{10}. \]

(3 marks)

5. a) Round these numbers. The first one is done for you.

<table>
<thead>
<tr>
<th>Number</th>
<th>To the nearest 10</th>
<th>To the nearest 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>436</td>
<td>440</td>
<td>400</td>
</tr>
<tr>
<td>842</td>
<td></td>
<td></td>
</tr>
<tr>
<td>567</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b) Put these numbers in order, smallest first.

82, 28, 48.

___, ___, ___.

(6 marks)
6. a) Write as a fraction in its simplest form.

\[ 55\% = \frac{5}{10} = \frac{1}{2} = \frac{1}{2} \]

b) Write as a percentage.

\[ \frac{85}{100} = 85\% \]

(3 marks)

7. a) Work out the perimeter of this shape.

\[ \text{Answer: } \underline{\text{cm}} \]

b) Work out the area of this shape.

\[ \text{Answer: } \underline{\text{cm}^2} \]

(5 marks)

c) On the grid below, draw a rectangle which has a perimeter of 12 cm.
1. a) Write two factors of 6. _______, _______.
b) Write two multiples of 5. _______, _______.
c) Write one square number. _______.
d) Write one prime number. _______.

(6 marks)
Complete this table:

<table>
<thead>
<tr>
<th>Shapes</th>
<th>How many shapes?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equilateral triangles</td>
<td></td>
</tr>
<tr>
<td>Isosceles triangles</td>
<td></td>
</tr>
<tr>
<td>Scalene triangles</td>
<td></td>
</tr>
<tr>
<td>Rectangles</td>
<td></td>
</tr>
<tr>
<td>Squares</td>
<td></td>
</tr>
</tbody>
</table>

(5 marks)
3. Input → \(-5\) → Output

a) What is the output, if the input is 6?

Answer: _____________

b) What is the input, if the output is 10?

Answer: _____________

(3 marks)

4. Work out:

a) \(\frac{5}{9} + \frac{2}{9} = \)

Answer: _____________

b) \(\frac{6}{7} - \frac{1}{7} = \)

Answer: _____________

(4 marks)
5. Underline the correct answer.

a) Angle $x$ is (acute, obtuse, reflex).

b) Angle $y$ is (acute, obtuse, reflex).

c) Angle $z$ is (acute, obtuse, reflex).

d) One complete turn of the car’s wheel is equal to (180°, 90°, 360°).

(4 marks)

6. a) Use your ruler and protractor to draw an angle of 60° at point A.
6. b) Work out angle ACB.

![Diagram of triangle ABC with angles 30°, 25°, and x°]

Answer: ______________ [5 marks]

7. a) Mary, John and Peter have 1.5 litres, 2 litres and 1.25 litres of water, in that order.

i) Who has the most amount of water?
   Answer: ______________

ii) Who has the least amount of water?
   Answer: ______________

iii) Put the amounts of water in litres in order, starting from most to least.

   __________litres, __________litres, __________litres.

b) Round the numbers to the nearest whole.

<table>
<thead>
<tr>
<th>Number</th>
<th>Nearest whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td>2.50</td>
<td></td>
</tr>
</tbody>
</table>
8. a) In a school there are 400 students. 80% of the students go to school by bus. How many students go by bus?

Answer: ______________ students

b) How many students do not go to school by bus?

Answer: ______________ students

(5 marks)

9. Continue these sequences:

a) i) 1, 3, 5, 7, _____.

ii) 10, 8, 6, 4, _____.

b) ____________

(3 marks)
10. a) This shape is formed with cubes of side 1 centimetre. How many cubic centimetres are there in this shape?

Answer: ______________ cm$^3$

b) A water tank measures 2 metres by 1 metre by 1.5 metres.

What volume of water, in cubic metres, can be put in the tank?

Answer: ______________ m$^3$

(3 marks)
11. This is a sketch of Thomas’ room, having a door and a window as shown.

(a) How long is Thomas’ room?

Answer: ______________ m

(b) How wide is the room?

Answer: ______________ m

c) Draw a scale drawing of the plan of Thomas’ room, using a scale of 2 cm : 1 m.
12. a) Fill in the missing numbers on the number line with:

\[ 2, -2, -4, 3. \]

\[ \begin{array}{ccccccc}
-5 & & & & & 1 & 4 & 5 \\
\hline
& & & & & & & \\
\end{array} \]

b) Use the number line:

Add 3 to \(-3\). The result is ________.

c) Angele has to give 20cent to Kylie and 30cent to Rebecca. She has 60cent in her pocket.

i) Does she have enough money for both of them?

Answer: ______________

ii) If Angele pays them both, how much money has she left?

Answer: ____________ cent

(7 marks)
13. In a class, **5 students** chose pizza, **4 students** chose French fries and **6 students** chose burgers.

a) Complete the bar chart to show this information.

![Bar Chart](chart.png)

b) **How many students** are there in class?

   Answer: ______________ students

c) What is the probability that a student from this class

   i) chose burgers?

      Answer: ______________

   ii) chose French fries?

      Answer: ______________
14. a) Which of the shapes has **rotational symmetry**? Shape ________.

```
Shape A  Shape B  Shape C
```

b) Draw the **lines of symmetry** of this shape.

c) i) Plot point B (2,4) and join it to point A.

ii) **Reflect** the line AB in the the **y-axis**.
15. Susan and Tim are making cake buns.

To make 5 cake buns, they need:

120 grams flour, 60 grams margarine, 1 egg, 90 grams sugar.

a) How many grams of flour do they need to make 10 cake buns?

Answer: ________ grams

b) How many grams of sugar is used for 1 cake bun?

Answer: ________ grams

c) The ratio flour : sugar is

_____ : _____

(5 marks)

END OF PAPER