INSTRUCTIONS TO CANDIDATES:
(To be read out by the external invigilator to all candidates before the start of the examination)

There are 46 questions in this paper worth 1 mark each and 1 question worth 5 marks. Attempt ALL questions, even if you are not sure of some of the answers.

The Examination is divided into three parts:

PART A: Multiple Choice (Questions 1 to 25) 25 marks
PART B: Short Answers (Questions 26 to 45) 20 marks
PART C: Extended Response (Question 46) 5 marks

The Answer Sheet is part of the Examination Booklet. Take out the middle pages and remove the Answer Sheet by tearing along the perforation. You may use the blank sheet for rough work.

Write your province code, school code, candidate number, your name and school name in the space provided on the Answer sheet.

For each question in PART A choose the best answer and write its LETTER in the space provided on the Answer Sheet.

For each question in PART B and PART C work out the answer and write the answer in the space provided on the Answer Sheet.

If you find a question very difficult, do not spend too much time thinking about it. Leave the question and go on with the rest of the paper. If you have time at the end, return to the difficult questions and think about them more carefully.

Write your answers in BLUE or BLACK ink (pen or biro).

If you decide to change an answer, make your correction as shown below so that it is clear to the markers what your final answer is. Do NOT use correction fluid on your answer sheet.

2 | X | B

Do NOT use calculators to work out your answers.

Hand in BOTH the Answer Sheet and the papers used for rough work at the end of the test.

THE PENALTY FOR CHEATING OR ASSISTING OTHERS TO CHEAT IN NATIONAL EXAMINATIONS IS NON-CERTIFICATION.

DO NOT TURN OVER THE PAGE AND DO NOT WRITE UNTIL YOU ARE TOLD TO START.
PART A (Questions 1 to 25)
For each question, choose the best answer and write the letter A, B, C or D in the space next to the question number on the ANSWER SHEET.

QUESTION 1
What percent of K1.00 is 5 toea?
A. 5      B. 15
C. 25     D. 50

QUESTION 2
Which of these expressions contain like terms?
A. $2x + 3y$  B. $3b + 3b^2$
C. $xy + 2xy$  D. $m^2n + n$

QUESTION 3
Study the diagram below and answer the question that follows

What is the direction of point C from O?
A. $S 25^\circ E$  B. $S 25^\circ W$
C. $N 25^\circ E$  D. $N 25^\circ W$

QUESTION 4
What is the value of $\frac{3}{4} - \frac{5}{7}$?
A. $\frac{2}{3}$  B. $\frac{1}{28}$
C. $\frac{11}{4}$  D. $\frac{5}{6}$

QUESTION 5
What is the size of angle y?

A. $201^\circ$  B. $207^\circ$
C. $208^\circ$  D. $291^\circ$

QUESTION 6
Conversion of ratios to fractions, decimals and percentages

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Fraction</th>
<th>Decimal</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:2</td>
<td>$\frac{1}{2}$</td>
<td>0.5</td>
<td>50%</td>
</tr>
</tbody>
</table>

Follow the example in the table above and answer the question.
The ratio 3:5 expressed as percentage is
A. 50%  B. 60%
C. 70%  D. 80%
QUESTION 7
The product of the expression below is 100.
The missing number in the square bracket is raised to the power 2.

\[ 2 \times 2 \times [\_ \_ \] \]

What is the missing number?
A. 4  
B. 5  
C. 6  
D. 7

QUESTION 8
The value of \( \frac{3}{5} + \frac{7}{8} \) is
A. \( \frac{11}{24} \)  
B. \( \frac{19}{30} \)  
C. \( \frac{24}{35} \)  
D. \( \frac{21}{40} \)

QUESTION 9
Peter bought 5 metres of white fabric and cut it into two pieces in the ratio 3:7.

What is the length of the longer piece in metres?
A. 1.4  
B. 1.5  
C. 3.5  
D. 4.0

QUESTION 10
A temperature reading indicated on a thermometer on a particular day was \(-12°C\).
After some hours, the temperature increased by \(5°C\).

What is the new temperature reading after the increase?
A. \(-17°C\)  
B. \(-7°C\)  
C. \(-7°C\)  
D. \(-17°C\)

QUESTION 11
AB is parallel to CE.
The size of angle x is
A. 21°  
B. 49°  
C. 61°  
D. 119°

QUESTION 12
The volume of the cylinder is 400 cm\(^3\) and its height is 20 cm.

What is the area of the end face in square centimetres?
A. 10  
B. 20  
C. 100  
D. 8000
QUESTION 13
What is the sum of 2 metres and 6 centimetres expressed in centimetres?
A. 2.06 B. 20.6
C. 206 D. 2,060

For questions 14 and 15 refer to the information below

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
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<tr>
<td>Rainfall</td>
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<td>45</td>
<td>52</td>
<td>57</td>
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<td>48</td>
<td>46</td>
<td>44</td>
<td>44</td>
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</tr>
</tbody>
</table>

The table below shows a short dictation test result from a Grade 7 class. Use the table to answer questions 16 and 17.

<table>
<thead>
<tr>
<th>Score</th>
<th>Tally</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>IIII</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>IIIII</td>
<td>7</td>
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<tr>
<td>3</td>
<td>IIIII</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>IIII</td>
<td>3</td>
</tr>
</tbody>
</table>

QUESTION 16
What is the mode score?
A. 7 B. 5
C. 3 D. 2

QUESTION 17
What percentage of the students scored below 2?
A. 50 B. 40
C. 25 D. 5

QUESTION 18
Study the 4 x 4 array of numbers from the calendar and answer the question below.

<table>
<thead>
<tr>
<th>TUE</th>
<th>WED</th>
<th>THUR</th>
<th>FRI</th>
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</thead>
<tbody>
<tr>
<td>6</td>
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<td>20</td>
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<td>23</td>
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<tr>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
</tbody>
</table>

The pattern going diagonally down, starting from top far left, to bottom far right is
A. +9 B. +8
C. +7 D. +6

Mathematics 2015
QUESTION 19

SHOES

Normal Price  K75
Discount  20%

What is the new selling price?
A.  K15   B.  K20
C.  K55   D.  K60

QUESTION 20

A car uses 5 litres of petrol to travel 20 kilometres.

How much petrol in litres would it require to travel 10 kilometres?
A.  2   B.  2.5
C.  2.75  D.  3

QUESTION 21

There are 12 oranges to be shared equally among a group of children. Each child received \( \frac{1}{2} \) of an orange. How many children were given oranges?
A.  20   B.  24
C.  25   D.  28

QUESTION 22

Calculate the volume, \( V = \frac{1}{3}Ah \) in cubic metres of a square based pyramid with sides 5 metres and height 9 metres.

A.  45   B.  75
C.  135   D.  225

QUESTION 23

The simplified form of \( 3(3a+7) - 6a + 1 \) is
A.  15a + 20   B.  15a - 20
C.  3a + 22   D.  3a - 22

QUESTION 24

Jane earns K500 per week and got a 10% pay rise.

How much will she be earning after the pay rise?
A.  K500.00   B.  K550.00
C.  K600.00   D.  K1,000.00

QUESTION 25

In a class of 40 students, 20% are females.

How many males are in the class?
A.  8   B.  16
C.  32   D.  40
PART B (Questions 26 to 45)

For each question in this part work out the correct answer and write it in the space provided on the ANSWER SHEET.

QUESTION 26

Calculate: \( \frac{2}{5} + \frac{3}{10} \)

QUESTION 27

Calculate: \( 42 + -6 \)

QUESTION 28

Using the formula \( s = (n-2) \times 180 \), calculate the total interior angle sum of a pentagon, where \( n \) is the number of sides of a polygon and \( s \) is the total interior angle sum.

QUESTION 29

What is the value of \( n \) in the number pattern: 1, 4, 7, 10, \( n \), 16, ...

QUESTION 30

Simplify: \( \frac{2p^2q^4}{p^3q^5} \)

QUESTION 31

A football club bought 20 jumpers at K22.95 each. Calculate the total cost in Kina for the jumpers.

QUESTION 32

K60.00 is to be shared between Anne, Dominic and Tio in the ratio 2:3:5.

How much in total will Anne and Tio receive?

QUESTION 33

Calculate the true bearing of point A.

QUESTION 34

If \( x = 2 \) and \( y = 5 \) then \( 2x^2 - y \) is?

For Questions 35 to 36, refer to the information below

The pictograph shows favourite sports of 8 Orange class in Rossel Primary School.

<table>
<thead>
<tr>
<th>Sports</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Volleyball</td>
<td>9</td>
</tr>
<tr>
<td>Soccer</td>
<td>7</td>
</tr>
<tr>
<td>Rugby</td>
<td>5</td>
</tr>
<tr>
<td>Basketball</td>
<td>3</td>
</tr>
</tbody>
</table>

QUESTION 35

How many students are there in 8 Orange class?

QUESTION 36

Which sport is favoured by the most number of students?
For questions 37 and 38, refer to the information below

The flight schedule shows the departure and arrival times for Fokker 100 Monday to Wednesday

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
</tr>
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<tbody>
<tr>
<td>IXT</td>
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QUESTION 37
How long in minutes is the flight, PX 243, from HKN to LAE on Tuesday?

QUESTION 38
Flight PX 142 departs POM at 1040 Hrs. When does the flight arrive in VAI? Give your answer in 12 Hour timing.

Refer to the pie chart below to answer questions 39 and 40

The pie chart below shows visitors to Papua New Guinea in a year.

QUESTION 39
What percentage of visitors came from other countries?

QUESTION 40
If there were 10000 visitors to Papua New Guinea in a particular year, how many were Australians?

QUESTION 41
Evaluate: \( \frac{10.6 + 1.65 - 0.25}{0.2} \)

QUESTION 42
Evaluate: \( (27 + -9) \times 2 - 6 \times 5 \)

Refer to the graph below to answer questions 43 and 44

The travel graph below shows Musa’s travel to visit his uncle.

QUESTION 43
What is the average speed of the return journey?

QUESTION 44
How long in hours did Musa spend with his uncle?
QUESTION 45

Circles A and B overlap. Circle A has a diameter of 18 cm and Circle B has a radius of 6 cm.

A straight line is drawn from the centre of Circle A to the centre of Circle B.

What is the distance between the two centres?

PART C (Question 46)

QUESTION 46

The graph below shows the Mathematics Examination result for 8 Grade 8 students. Study the graph and answer the questions that followed.

![Graph showing examination marks for students]

a) What is the highest score?

b) What is the mode for the examination marks?

c) What is the range of the examination marks?

d) How many students scored a mark below 20?

e) Calculate the average score correct to two decimal places.

END OF EXAMINATION
### PART A: (QUESTIONS 1 to 25)
Write the letter of your answer next to each question number below.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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### PART B: (QUESTIONS 26 to 45)
Write your answer next to each question number below.

<table>
<thead>
<tr>
<th>26</th>
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</table>

### PART C: (QUESTIONS 46)
Write your answer next to each question number below.

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
</table>

*Answer Sheet Insert*