



DEPARTMENT OF
EDUCATION

CERTIFICATE OF
BASIC EDUCATION
EXAMINATIONS

MATHEMATICS

Tuesday

30 October 2012

Time allowed: 3 hours
(8:30am – 11:30 am)

NO EXTRA TIME
(NO OTHER TIME)

Candidates are advised to
fully utilise the allocated
time

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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 **50** 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 candidate number, your name, school name and province name in the space provided on the **Answer sheet**. The invigilator will tell you what to write.

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	A C
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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.

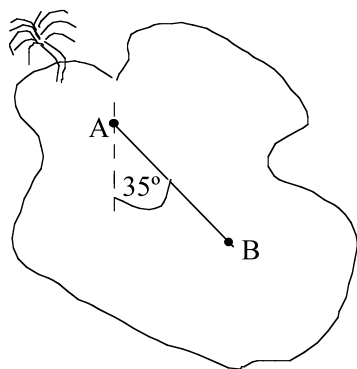
DO NOT TURN OVER THE PAGE AND DO NOT WRITE UNTIL YOU ARE TOLD TO START.

PART A: (Questions 1 - 25) 1 mark each

Choose the best alternative for each question and write the letter A or B or C or D in the space next to the question number on the ANSWER SHEET.

QUESTION 1

Points A and B represent two locations on an island. Point B from point A is S35°E.



In what direction does point A lie from point B?

- A. N55°W B. N35°W
C. N55°E D. N35°E

QUESTION 2

A kumul jersey costing K240 is reduced in a sale by 10%. Calculate the cost price after the discount.

- A. K230 B. K220
C. K206 D. K216

QUESTION 3

Simplify: $2^6 \div 2^3$

- A. 2^3 B. 2^4
C. 2^{18} D. 2^9

QUESTION 4

Write 20% as a fraction in its simplest form.

- A. $\frac{20}{100}$ B. $\frac{1}{4}$
C. $\frac{1}{5}$ D. $\frac{1}{6}$

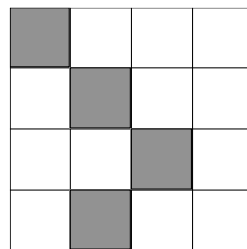
QUESTION 5

What is three-quarter of K16.00?

- A. K4.00 B. K3.00
C. K12.00 D. K16.00

QUESTION 6

What decimal fraction of the square below is shaded?



- A. 0.15 B. 0.2
C. 0.25 D. 0.30

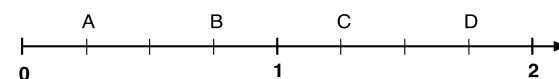
QUESTION 7

Which of the options below would have the larger value?

- A. 0.65 B. $\frac{5}{8}$
C. 64% D. 6:9

QUESTION 8

Which letter indicates the position 0.75 on the number line below?



QUESTION 9

Ambassi walks at the rate of 4 km per hour.
Tambala walks at the speed of 5 km per hour.
After 3 hours of nonstop walking, what is the distance (in kilometres) between Ambassi and Tambala?

- A. 1 B. 2
C. 3 D. 4

QUESTION 10

$7538 + 324 - 3469 = \underline{\hspace{2cm}}$. Round off the answer to the nearest 100.

- A. 5300 B. 4800
C. 4393 D. 4400

QUESTION 11

Three and six tenths written as a decimal is;

- A. 3.6 B. 0.36
C. 0.036 D. 0.003 6

QUESTION 12

Luke made a concrete path 20 metres long and 2 metres wide at the back of his house.

What was the perimeter of the pathways?

- A. 404 B. 44
C. 34 D. 24

QUESTION 13

A blackboard is 2.5 meters in length and 1.5 meters in width.

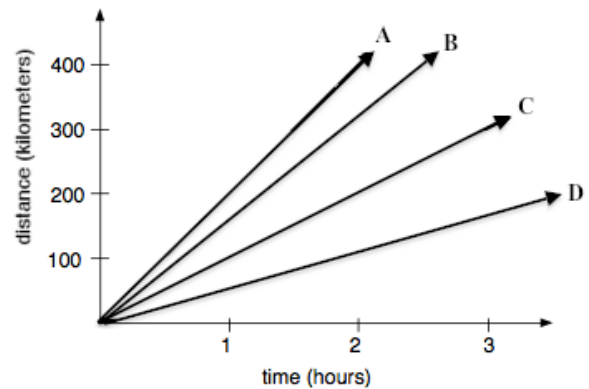
What is the ratio of the width to the length?

- A. 2:5 B. 5:2
C. 3:5 D. 5:3

QUESTION 14

The average speed of a PMV bus on the Leron plains travelling through the Markham Valley is 100 kilometres per hour.

Which of the lines on the graph represents the PMV's average speed?

**QUESTION 15**

Simplify; $(2^2)^3 \div (2^3)^2$

- A. 0 B. 1
C. 2 D. 3

QUESTION 16

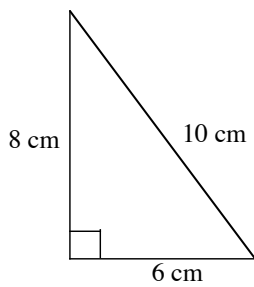
Linda's weight to Jenny's weight is of the ratio 7:8.

If Jenny's weight is 64 kg then what is Linda's weight in kilograms?

- A. 40 B. 48
C. 56 D. 72

QUESTION 17

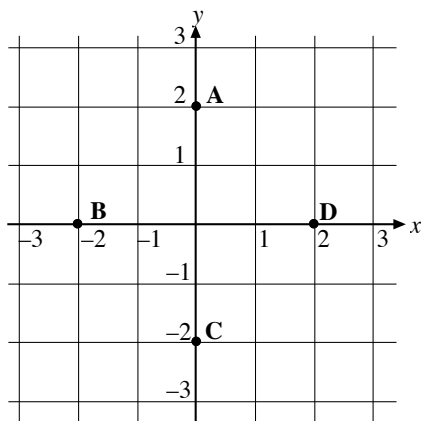
What is the area of the right-angled triangle below in cm^2 ?



- A. 48 B. 30
C. 24 D. 14

QUESTION 18

Which point on the number plane has the co-ordinates (0,2)?



QUESTION 19

John withdrew from his bank account 10% more than K200.00.

How much did he withdraw?

- A. K220.00 B. K180.00
C. K120.00 D. K80.0

QUESTION 20

What is 20% of K1.00?

- A. K0.20 B. K0.80
C. K1.00 D. K2.00

QUESTION 21

Measure the rectangle below using your ruler. If the scale is 1cm:1m, what would be the area of the rectangle to the nearest whole number?

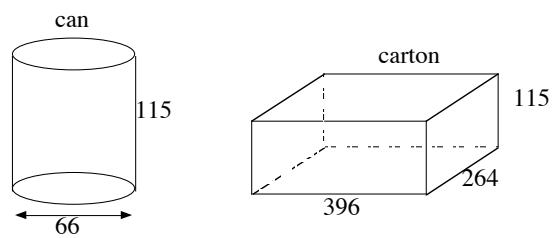


- A. 2m^2 B. 3m^2
C. 4m^2 D. 8m^2

QUESTION 22

The dimension of a can of fish and the carton it is packed in is shown below. The diagrams are not drawn to scale and the dimensions are all given in millimetres.

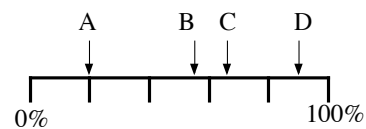
What is the maximum number of cans the box can hold?



- A. 48 B. 24
C. 18 D. 12

QUESTION 23

Which letter shows 55%?



QUESTION 24

The table below shows the exchange rate of foreign currency against 1 PNG Kina.

What your Kina is worth			
(July 21, 2011)			
USD	0.4390	PHP	18.71
AUD	0.4089	JPY	34.60
CAD	0.4150	NZD	0.5120
CHF	0.3604	SGD	0.5319
GBP	0.2714	SDR	0.2754
HKD	3.4209	KRW	463.01
EUR	0.3077	FJD	0.7695

Courtesy: Bank of Papua New Guinea

How much Australian dollar (AUD) would John get for K300.00?

- A. 733.68 B. 300.00
C. 150.00 D. 122.67

QUESTION 25

Nancy buys a carton of fish (48 tins) for K240.00.

How much should she sell each tin for to make a profit of 20%?

- A. K1.00 B. K4.00
C. K5.50 D. K6.00

PART B: (Questions 26 - 45) 1 mark each

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

QUESTION 26

An athlete runs a 100 metres sprint in 10 seconds.

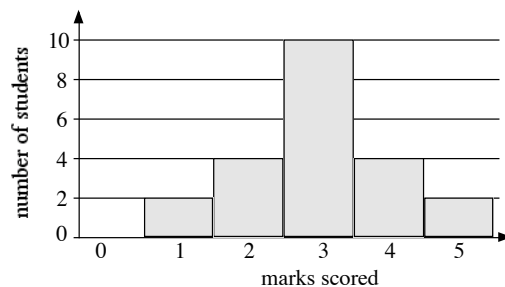
What is his speed in metres per second?

QUESTION 27

What is the area of a square with sides 15 centimetres?

Question 28

The graph below represents test marks of students in a class.



What is the average score of the class?

Questions 29

What is 15% of K140?

QUESTION 30

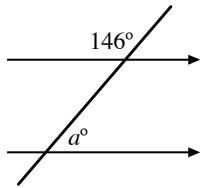
Write 0.3 as a simplified fraction.

QUESTION 31

Calculate $5 \times 6 \div -3 + 3 \times -1$.

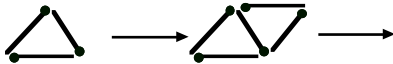
QUESTION 32

Find the value of angle a .



QUESTION 33

The figures below are made from matchsticks.



How many matchsticks can be used to form a hexagon following the patterns shown above?

QUESTION 34

Walo has a monthly salary of K500 and this is how she spends it.

40%	Savings
30%	Food
15%	Bus fare
15%	Others

How much does she spend on food in a month?

QUESTION 35

$$\frac{2}{3} \div \frac{1}{3} + \frac{1}{2} \times \frac{1}{4} = \frac{x}{8}$$

What is the value of x ?

QUESTION 36

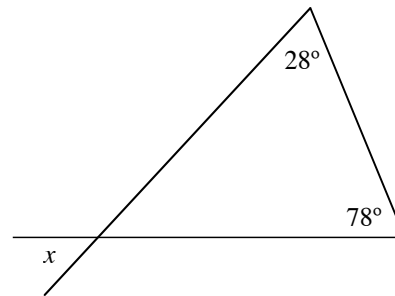
Barakau Inn is offering accommodation as advertised below.

BARAKAU INN
Accommodation Rooms for Rent
 Key Deposit - K 50
 Refundable upon Checkout
 Rental: K150.00 per night

How much do I pay on the day I check in to be able to stay 3 nights?

QUESTION 37

Work out the answer for angle x ?



QUESTION 38

A circle has a diameter of 70cm. Using $\pi = \frac{22}{7}$, calculate its circumference in centimetres.

QUESTION 39

The sum of four numbers is 20 and their average is 5. When a fifth number is added, the new average is 6.

What is the fifth number?

QUESTION 40

Convert 0.075 into percentage.

QUESTION 41

Jenny has 56 red, blue and green marbles in the ratio 1:2:4 respectively.

How many marbles are blue?

QUESTION 42

Factorize: $2x^2 - 4x$

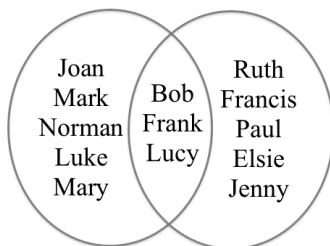
QUESTION 43

$$-2 + 3 = a - 2 + 6$$

What is the value of a ?

Question 44

Students in a class play two types of sport. The diagram below illustrates their preference with regard to the sports.



What fraction of students plays both sports?

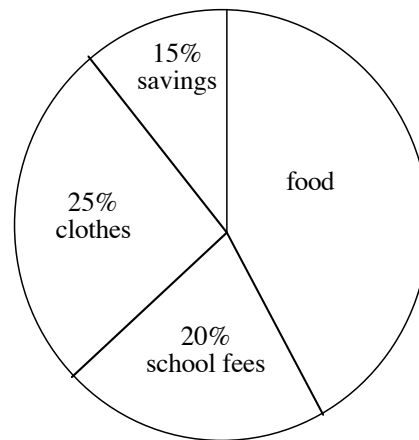
QUESTION 45

A women's fellowship group washed a school mess and charged the school K300 for six hours of work.

How much would have been earned if they worked for eight hours?

PART C: EXTENDED RESPONSE**QUESTION 46**

Mr. Siwi budgets K450.00 as shown on the pie chart.



- (i) How much money was budgeted on food?
- (ii) How much money was budgeted on school fee?
- (iii) What **fraction** of the salary is budgeted on clothes?
- (iv) What is the total amount of money budgeted on food and school fee alone?
- (v) If Siwi spent only 30% of his money on food, how much did he save from his food budget?

END OF EXAMINATION