MARKER CODE			

STUDENT ENROLMENT NUMBER									

FORM 2 COMMON EXAMINATIONS

2016

MATHEMATICS

QUESTION AND ANSWER BOOKLET

Time Allowed: **2 Hours**

INSTRUCTIONS

1. This paper has **THREE Sections.** ALL Sections are COMPULSORY.

SECTION A:	**Multiple Choice**	**20 MARKS**
SECTION B:	**Short Answers**	**25 MARKS**
SECTION C:	**Longa Answers**	**55 MARKS**

2. Write your **Student Enrolment Number (SEN)** on the top right hand corner of this page and on page 23.
3. You are NOT allowed to use a calculator.
4. Answer **ALL** questions in the spaces provided for each question in this booklet. **SHOW ALL YOUR WORKING**.
5. Check that this booklet contains **23** pages.

YOU MUST HAND IN THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL MARKS 100

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

Circle the letter in front of the best answer.

1. What is the place value of 5 in the number 230654?

   A. Tens
   B. Tenths
   C. Hundreds
   D. Units/ones

2. Which of the following is not a composite number?

   A. 5
   B. 7
   C. 12
   D. 39

3. 12% is equivalent to

   A. 12
   B. 1.2
   C. 0.12
   D. 0.012

4. The square root of 144 is

   A. 8
   B. 10
   C. 12
   D. 14

5. Lesina drove $^1/_3$ of the distance from Te'ekiu to Fo'ui. It is 309m from Te'ekiu to Fo'ui. What distance did Lesina drive?

   A. 1.3m
   B. 13m
   C. 103m
   D. 130m

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6. Which of the following is not true?

A. $0.16 < 0.2$
B. $9.6 > 7.6$
C. $29415 < 29145$
D. $40635 < 43605$

7. What is the value of 3^0 ?

A. 0
B. 1
C. 3
D. 30

8. Tevita took out 6.55kg from a 15kg box of chicken. How many kilograms of chicken is left in the box?

A. 8.45kg
B. 8.85kg
C. 9.75kg
D. 9.85kg

9. Saula spend $\frac{2}{7}$ of his money on food and $\frac{1}{7}$ on bus fare. What fraction of his money was not spend?

A. $\frac{1}{7}$
B. $\frac{2}{7}$
C. $\frac{3}{7}$
D. $\frac{4}{7}$

10. In the Olympic 100m final, the runner has the following time. Given below are the results for all 4 lanes. Which Lane won the race?

Lane	time
1	10.02s
2	10.05s
3	9.98s
4	9.97s

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

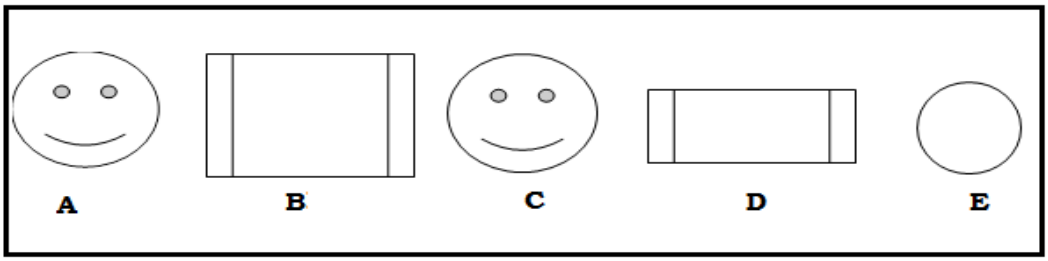
11. Multiplying 12×100^{-4} is equal to:

A. 0.0012
B. 0.012
C. 1200
D. 120000

12. At the farmer, 2 adults and 5 children are looking at 4 cows. How many legs are there all together?

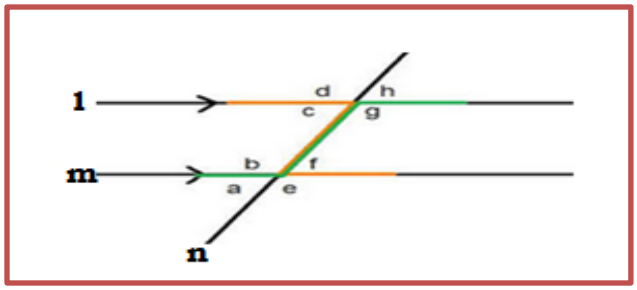
A. 11
B. 14
C. 20
D. 30

13. Two shapes in the box below are similar.



A. A and C
B. B and D
C. C and E
D. D and E

14. Which of the following indicates parallel line?



A. **n** and **m**
B. **l** and **m**
C. **h** and **f**
D. **d** and **b**

15. If angle **g°** is equal to **145°**, angle **e°** is equal to _____.

A. 110°
B. 130°
C. 145°
D. 180°

16. One hectare is equivalent to _____.

A. 100 meter square
B. 1,000 meter square
C. 10,000 meter square
D. 100,000 meter square

17. How long would Sofia's flight if it takes off at 11:15 pm and land at 5:45 am the next day?

A. 5 hours 30 minutes.
B. 5 hours 45 minutes.
C. 6 hours 30 minutes.
D. 6 hours 45 minutes.

18. What is the seventh triangular number?

A. 25
B. 28
C. 30
D. 40

19. A six-sided die is rolled once. What is the probability that the number rolled is an even number?

A. $\frac{2}{6}$

B. $\frac{3}{6}$

C. $\frac{4}{6}$

D. $\frac{5}{6}$

20. From the list of scores 31, 30, 32, 33, 30. The mode is _____.

A. 30
B. 31
C. 32
D. 33

SECTION B: SHORT ANSWERS (25 MARKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION.

Write the answer to each question in the spaces provided.
It is for your best interest to ***SHOW ALL YOUR WORKING,*** *as some marks are allocated for correct methods and partially correct answers.*

1. Write these fractions in decimal form and calculate the answer. (2 Marks)

$$\frac{7}{10} + \frac{7}{100} + \frac{1}{1000} + \frac{6}{10000} + \frac{2}{100000} + \frac{7}{1000000}$$

2. Calculate:

a) $\frac{3}{7} - \frac{2}{5}$ (2 Marks)

b) (-3 + 8) - 6 (2 Marks)

c) $16 \times 2 + 4 \div 2 - 10$ (2 Marks)

d) $\sqrt{100} \times 3^2$ (2 Marks)

3. Use the estimation method to add and subtract the following. Round to the nearest 100.

a)

156 ⟶

+ 746 ⟶

(2 Marks)

b)

24500 ⟶

- 1345 ⟶

(2 Marks)

4. Find the sum of internal angles for the shapes of the polygon. (4 Marks)

Shape of Polygon	Sum of internal angles
Quadrilateral	
Pentagon	
Heptagon	
Dodecagon	

5. Evaluate the following.

a) $12^2 \times 12^3$ (1 Mark)

b) $R^7 \div R^3$ (1 Mark)

6. Change the following to the required unit.

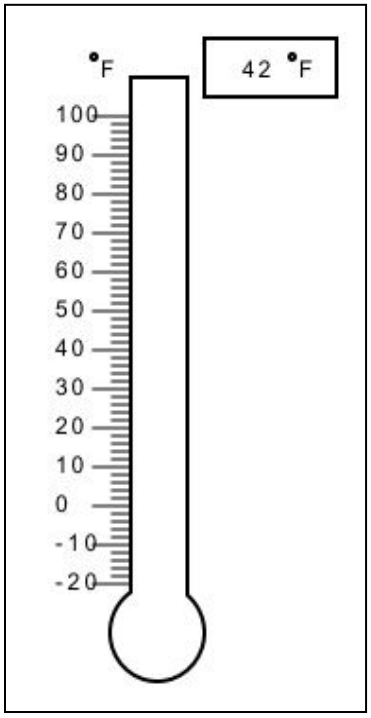
a. 3600 km _____ m (1 Mark)

b. 14.5 cm _____ mm (1 Mark)

c. 1.5 L _____ mL (1 Mark)

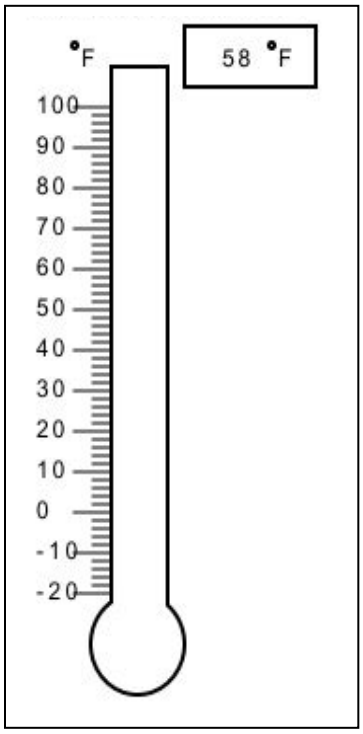
7. Draw an arrow to indicate the correct temperature on the diagrams below.

a)



(1 mark)

b)



(1 mark)

SECTION C: LONG ANSWERS (55 MARKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION.

Write the answer to each question in the spaces provided.
It is for your best interest to ***SHOW ALL YOUR WORKING,*** *as some marks are allocated for correct methods and partially correct answers.*

Each question is worth 11 marks.

QUESTION ONE

a) Write this numbers 3,952,018 in words. (2 Marks)

b) Write this number in compact form. (2 Marks)

$3 \times 10^6 + 6 \times 10^4 + 9 \times 10^2 + 2 \times 10^1 + 2 \times 10^0$

c) Express 256 in prime factors using index notation. (3 Marks)

d) There are 50 socks in Ta'alo's sock drawer. He notices that 6 of his socks are blue, 8 brown, 24 striped and 12 are white.

i. What fraction of Ta'alo's socks are

a. Brown. (1 Mark)

b. Not white. (1 Mark)

ii. What percentage of Ta'alo's socks are

c. White (2 Marks)

d. Striped (2 Marks)

QUESTION TWO

a) The Scripture Union decided to go camping and went to the Outdoor Equipment Store to purchase equipment. They bought:

2 tents	$218.00 each
6 beds	$27.85 each
6 sleeping bags	$39.75 each
2 tables	$36.95 each
8 chairs	$11.45 each

i. What was the total amount spent on the camping equipment? (4 Marks)

ii. The Scripture Union gave the retailer $1200 to pay for the equipment. How much change did they receive? (2 Marks)

iii. If the Outdoor Equipment Store give them 10% discount. What will be the actual amount to be paid? (2 Marks)

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b) Vise wants to save some money to buy a $350 bicycle. He decided to save 50% of his salary $200 fortnightly.

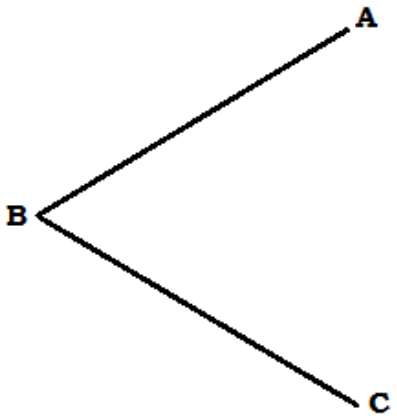
i. How much did he save each fortnight? (2 Marks)

ii. How long will he take to save enough money to buy his bicycle? (3 Marks)

QUESTION THREE

a) Use a compass and ruler to bisect the following.

i. (2 Marks)

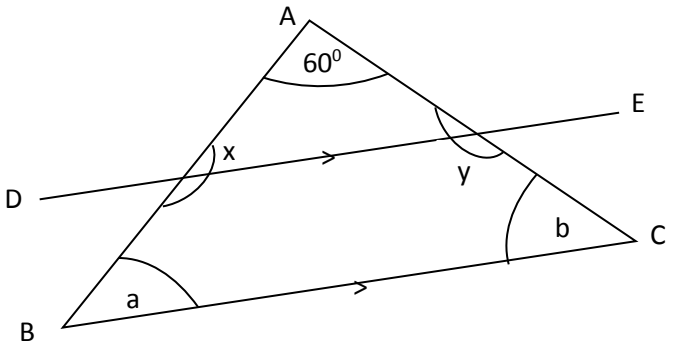


ii. (2 Marks)

iii. Construct an angle of 120° at A. (2 Marks)

A _____

b) Use this equilateral triangle to answer the following questions.



i. Find the missing angle labelled **a and b.**

a. Angle **a**: _____ (1 Mark)

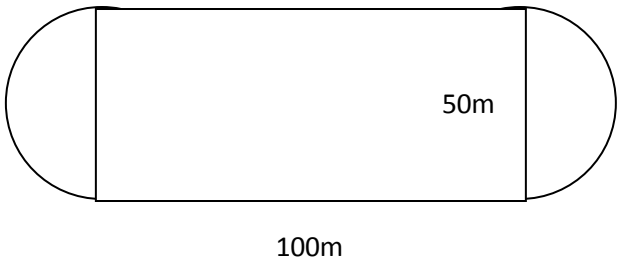
b. Angle **b**:_____ (1 Mark)

ii. Name the relationship between angle x and angle y. (1 Mark)

iii. Draw the shapes of two triangles which are similar. (1 Mark)

QUESTION FOUR

a) The track shown below is made up of 2 semi-circles and a rectangle.



i. If you run once around the complete track, what distance have you run?
$\pi = 3.14$ (4 Marks)

ii. How much shorter it is if you run only around the rectangular part?
(2 Marks)

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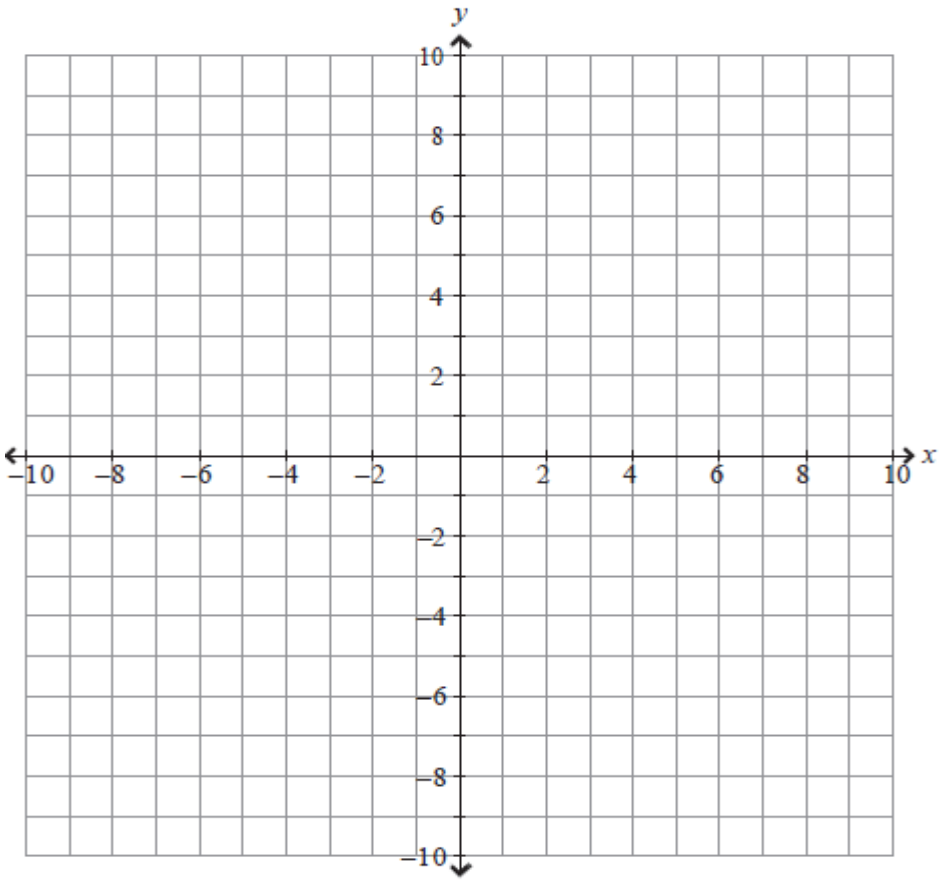
b) Use the rule $y = 2x + 1$ to complete this table (2 Marks)

$y = 2x + 1$	0	1	2	3	4

c) Use the ordered pairs in your table above to plot the graph of $y = 2x + 1$.
(2 Marks)



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QUESTION FIVE

a) By using square number, **draw** the first 3 square numbers. (2 Marks)

b) A 2m long tank has a width and height of 50cm. Does the tank have more or less volume than a cube of side length 80cm? Show your working. (2 Marks)

c) A box of marbles contains 8 red, 6 blue and 10 green. 'Ofa wants to take out a marble and give it to his friend. What is the probability that 'Ofa will pick a

i. blue? (1 Mark)

_____

ii. white? (1 mark)

_____

d) The following data are the result of these students who sat the first Common test in Mathematics. This test was out of 50 and given below are the scores: Kena – 50, Ma'asi − 30, Sione – 10, 'Ofiu – 20 and 'Aisea – 15.

Plot this data on a column graph. You will need to give a title of your graph as well as axes. (3 Marks)

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MATHEMATICS

2016

(For markers use only)

SECTIONS		MARK	CHECK MARKER	TOTAL
A	MULTIPLE CHOICE			20
B	SHORT ANSWERS			25
C	LONG ANSWERS			55
TOTAL				100