THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

MBOZI DISTRICT COUNCIL

FORM TWO MOCK ASSESSMENT

041   **BASIC MATHEMATICS**

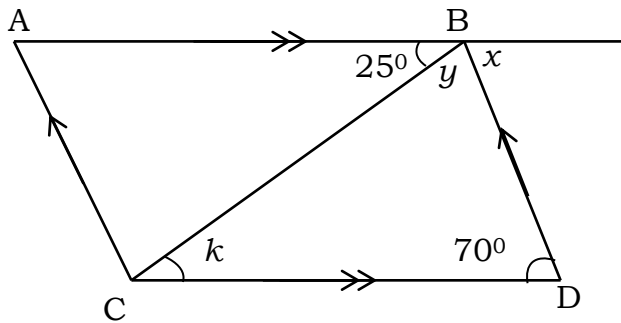**TIME: 2:30 Hours**   **YEAR. 2023**

Instructions

1. This paper consists of **ten (10)** compulsory questions.

2. Answer **all** questions

3. Show clearly all the working and answer in the space provided

4. All writing must be in blue or black ink **excep**t drawings which must be in pencil

5. All communication devices, Calculators and any unauthorized materials are **not** allowed in the assessment room.

6. NECTA Mathematics tables, geometric instruments and graph papers may be used

7. Write your **Assessment Number** at the top right corner of every page.

FOR ASSESSOR'S USE ONLY		
QUESTION NUMBER	SCORES	ASSESSOR'S INITIALS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		
CHECKER'S INITIALS		

1. (a).In a test, three pupils scored as follows: John scored all questions, Amina scored 7 out of 10 questions and Benson scored forty percent. Calculate
   (i)   The highest mark of the test in percentage

   (ii)   The average mark

   (b). Find the smallest number which is divisible by all even numbers between 9 and 16

2. (a)Mwananyunyi spent 1/4 of his day for working,2/3 of a day for resting and the remaining for sleeping. How many hours he uses for a whole day in sleeping?

   (b)Amiza bought a radio for the.180,000/=she then sold it in the next year for 20% loss. What was the selling price?

3. (a)

(i) Find the values of k, x and y

(ii) Evaluate $k + y - x$ from 3(a)(i) above

(b) The perimeter of a rectangular garden is 60cm. If the width is 10 cm, calculate it's area.

4. (a)(i) Make " k" the subject from $T = F\sqrt{\dfrac{k - d}{k}}$

(ii) The factors of the quadratic equation $2x^2 - bx + 3 = 0$ are $(x - 3)$ and $(ax-1)$. Find the value of $"a"$ and $"b"$

(b) A rectangular garden is 6m wide and 8m long. What length should be added to the shorter and reduced to the longer side to form a rectangular garden with an area of 45 metres squares?

5. (a) A school lorry has a mass of 10 tonnes 500 kilograms when loaded with beans. If the mass of the beans is 4 tonnes 90 kilograms, find the mass of the lorry

(b) (i) The cost of the book has increased from 9000 Tanzanian shillings to 12000 Tanzanian shillings. By what percentage did the cost increased?

(ii)Find the value of 0.43×5.208, write your answer in 3 significant figures.

6. (a) (i)Find the gradient from a line $2x - y = 6$

(ii)If a line joining (P, 4) and (2, 3P) has a gradient of -8.Find the value of P

(b)Find the image of (-3,5) when is;

(i)Reflected in the line $y = -x$

(ii) Translated by T(-1,-2)

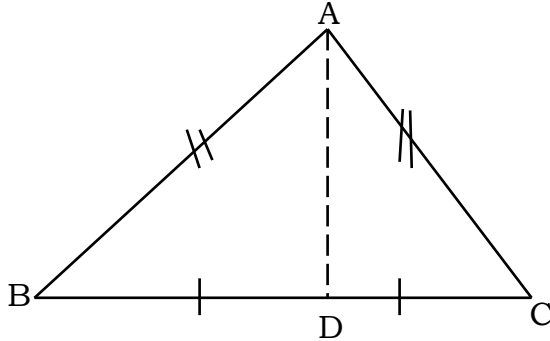7. (a) (i)Given that $\left(2^{x-1}\right)\left(5^{2y+1}\right) = 500$

    Find the value of x and y.

    (ii)If $x*y$ is the operation x cubed plus y, then find the value of 4*(3*2)

    (b) Rationalize the denominator of $\dfrac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$

8. (a) Triangle ABC is an isosceles triangle in which AB and AC are equal. If D is the midpoint of BC, prove that triangle ABD congruent to triangle ACD

(b) In the following figure. Triangle ABC is similar to triangle PQR. If AC = 4.8cm, AB = 4 cm and PQ = 9cm, find the value of PR
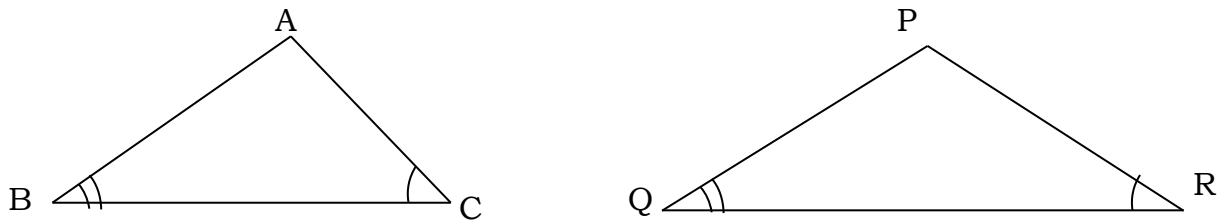
9. (a) An isosceles triangle PQR is such that $\angle PQR = 45^0$ and $\angle RPQ = 90^0$ .If PQ=6cm,find the length of RQ using trigonometric ratios giving the answer in form of the radical or surd form

(b)A man travels 15km to north and then 8 km due to west .How far is he from his starting point?

10. (a) If u={a, b, c, d, e, f} and A'={b, d, f} List the elements of A

(b)The following table shows the marks scored by students in

Mathematics test.

Marks %	20	35	40	50	55	60	70
No.of students	4	3	2	18	5	3	2

Use the table above to answer the questions

(i)   What is the highest mark scored?
(ii)   What is the lowest mark scored?
(iii) Which mark was scored by many students?
(iv)   If 50%was the pass mark in the test how many passed?
(v)   Calculate the percentage of student who failed the test