Student's Assessment Number.....

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
FORM TWO NATIONAL ASSESSMENT

041

BASIC MATHEMATICS

Time: 2:30 Hours **Year: 2023**

Instructions

1. This paper consists of **ten (10) compulsory** questions. Each question carries **ten (10)** marks.
2. Show clearly all the working and answers in the spaces provided.
3. All writing must be in **blue** or **black** ink **except** drawings which must be in pencil.
4. NECTA mathematical tables, geometric instruments and graph papers may be used where necessary.
5. All communication devices and calculators are **not** allowed in the assessment room.
6. Write your **Assessment Number** at the top right corner of every page.

FOR ASSESSOR'S USE ONLY		
QUESTION NUMBER	**SCORE**	**ASSESSOR'S INITIALS**
1		
2		
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10		
TOTAL		
CHECKER'S INITIALS		

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1. (a) List the first twelve multiples of 4 and 5 and hence identify the common multiples.

2.

(b) Evaluate $\frac{2}{25} \times 0.737$ correct to;

(i) one significant figure.

(ii) three decimal places.

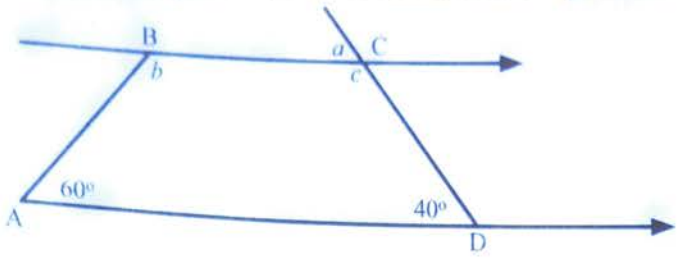
2. (a) Arrange the given fractions in ascending order of magnitude: $\frac{2}{3}$, $\frac{4}{7}$, $\frac{3}{8}$ and $\frac{5}{9}$.

(b) In the year 2016 the population of Mericho village was 2,800. In 2017 the population increased by 8%. What was the population in 2017?

3. (a) If 1,000 tonnes of maize were shared equally among 25 schools, how many kilograms did each school get?

(b) A shopkeeper bought a radio for sh. 80,000 and sold it at a profit of 20%. What were the profit and selling price?

4. (a) If ABCD is a trapezium, find the values of the angles marked a, b and c.



(b) The floor of a room is a square of length 5 metres. Find its perimeter and area.

5. (a) If $\frac{6y+1}{4} = \frac{5(y+5)}{6}$, find the value of y correct to three significant figures.

(b) Solve the equation $3x^2 - 7x - 6 = 0$ by completing the square.

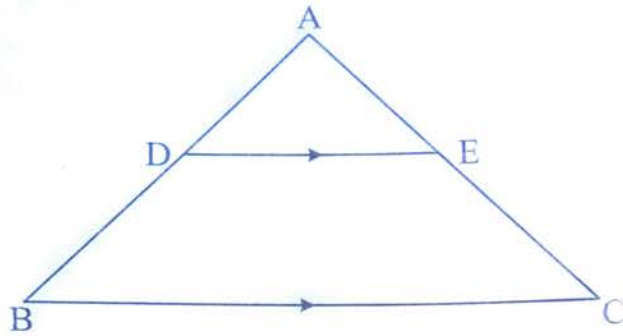
6. (a) Find the gradient of a straight line joining the points (-1, 2) and (3, -5).

(b) Find the image of point $P(-3, 7)$ after a reflection in the x-axis and y-axis.

7. (a) Solve for n in the equation $16^{(3-n)} \times 2^{(1+n)} = \frac{1}{2}$. Leave the answer in improper fraction form.

(b) Find the value of x in the equation $\log(2x^2+1) + \log 4 = \log(7x^2+8)$.

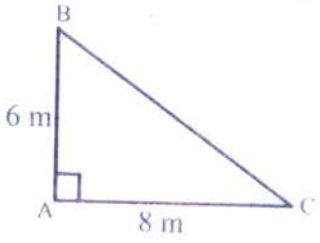
8. (a) In the given figure, $\overline{AD} : \overline{BD} = \frac{3}{5}$ and $\overline{AC} = 9.6$ cm. Find the length of $\overline{AE}$.



(b) ABC is a triangle in which $\overline{AB} = \overline{AC}$ and D is the mid-point of $\overline{BC}$. Prove that $A\hat{B}D = A\hat{C}D$.

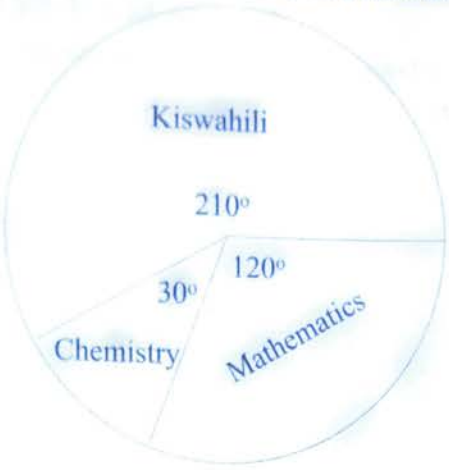
9. (a) The angle of elevation of the top of a building from a point on the ground is 25°. If the point on the ground is 80 m from the base of the building, find the height of the building correct to one decimal place.

(b) Calculate the length of $\overline{BC}$ in the following Figure.



10. (a) At a certain school, 250 students attended on the first day of re-opening of the school, 350 students attended on the second day and 150 students attended on both first and second day. It was further noted that 10 students were absent on both days. If all registered students were supposed to attend the school on both days, how many students does the school have? Do not use Venn diagram.

(b) The given Pie chart represents the number of students who passed a Qualifying Test in Mathematics, Chemistry and Kiswahili.



Find:

(i) the fraction of students who passed Kiswahili.

(ii) the percentage of students who passed Mathematics.

(iii) the percentage students who passed Mathematics and Chemistry.

