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: 2024**

Instructions

1. This paper consists of **ten (10)** questions.
2. Answer **all** questions.
3. Each question carries **ten (10)** marks.
4. Show clearly all the working and answers in the space provided.
5. All writing must be in **blue** or **black** ink **except** drawings which must be in pencil.
6. NECTA mathematical tables, geometric instruments and graph papers may be used where necessary.
7. Communication devices, calculators and any unauthorised materials are **not** allowed in the assessment room.
8. 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		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		
CHECKER'S INITIALS		

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1. (a) Find the GCF and LCM of the numbers 90 and 240.

(b) Estimate the value of $8108 \div 37$.

2. (a) Simplify $3\frac{9}{10} \div \left(3\frac{3}{5} - 1\frac{1}{2}\right)$.

(b) Change $1.\dot{2}\dot{3}$ into mixed numbers.

3. (a) How much money will you have to lend in order to get the interest of sh. 36,000 at 5% per annum if you lend it for 6 months?

(b) Nyanjara bought 50 bottles of milk for 70 children. If the capacity of each bottle is 300 *ml*, find the amount of milk in litres that Nyanjara bought.

5. (a) Solve for x in the equation $1-\frac{x+2}{2}=x-3$.

(b) What term must be added to $n^2+1\frac{1}{2}n=0$ in order to make the equation a perfect square?

4. (a) Two complementary angles are such that, one angle is twice the other. Find the size of those angles.

(b) The perimeter of an isosceles triangle is 15 cm. If the base is 7 cm long, represent this information in a diagram and then find the length for each of the remaining equal sides.

6. (a) A point P' (0, 0) is the image of P (−2, 2) under a translation T. What is the image of the point $(5, -1)$ under the same translation?

(b) If a straight line passes through the point (1, 2) and cuts the y-axis at the point (0, 2), find its equation.

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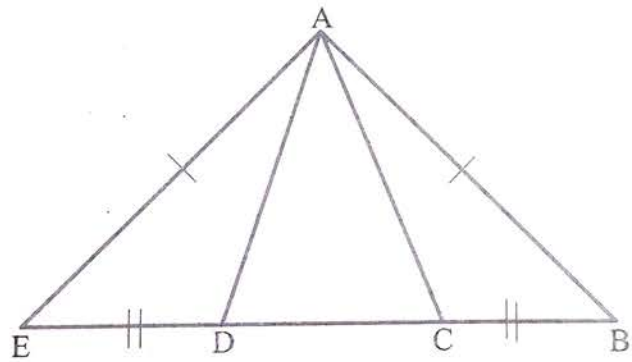
7. (a) If $x = \sqrt{3}$, $y = \sqrt{2}$ and $z(x - y) = 2$, express z in the form $z = a\left(\sqrt{b} + \sqrt{c}\right)$.

(b) Use the following figure to prove that $\Delta ABC \equiv \Delta AED$:



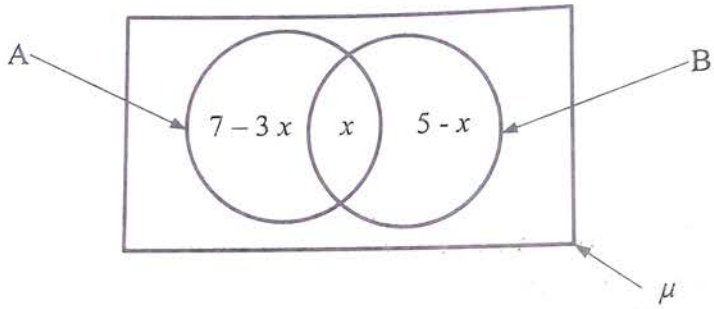
(b) Simplify $\frac{\log 8 - 2\log 4}{\log 4 - \log 2}$.

8. (a) If ΔPQR and ΔLMN are similar, find $R\hat{Q}P$ given that $M\hat{N}L = 40^\circ$ and $Q\hat{P}R = 60^\circ$.

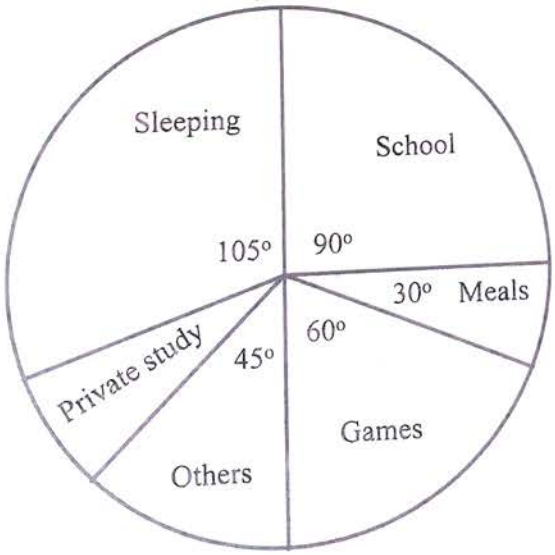
9. (a) A student walks from home to school, first eastwards to a road junction 14 km from home, then southwards to school. If the shortest distance from home to school is 20 km, how far is the school from the road junction? Express your answer correct to 3 decimal places.

(b) Find the value of $2\sin 60^0 + \cos 30^0 - \tan 60^0$. Give your answer in radical form.

10. (a) The following figure shows the number of elements in each subset. If the number of elements in set A is equal to the number of elements in set B, find $n(A \cup B)$ and $n(A)$.



(b) The given Pie chart represents the time spent by John in doing different activities on every Monday.



(i) How many hours does he spend for private study?

(ii) How many hours does he sleep?

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