

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 : 2021

**Instructions**

1. This paper consists of **ten (10) compulsory** questions.
2. Show clearly all the working and answers in the space 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, calculators and any unauthorised materials are **not** allowed in the assessment room.
6. Write your **Assessment Number** at the top right corner of every page.

<b>FOR ASSESSOR'S USE ONLY</b>		
<b>QUESTION NUMBER</b>	<b>SCORE</b>	<b>ASSESSOR'S INITIALS</b>
1		
2		
3		
4		
5		
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9		
10		
<b>TOTAL</b>		
<b>CHECKER'S INITIALS</b>		



1. (a) (i) Write 498,030 in words.

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(ii) Express the number given in part (a) (i) in standard notation.

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(iii) By using the listing method, write the lowest common multiple of: 3, 10 and 15.

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(b) (i) Write in numerals: nine hundred ninety nine million nine hundred ninety nine thousand nine hundred and one.

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(ii) Determine the number of significant figures in each of the numbers: 400,780 and 0.00606, then approximate each number into one significant figure.

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2. (a) (i) Write the fractions:  $\frac{2}{3}$ ,  $\frac{3}{4}$ ,  $\frac{5}{8}$ , and  $\frac{1}{2}$  in order of magnitude starting with the smallest fraction.

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- (ii) Find the product of the fractions given in part (a) (i).

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- (b) Subtract 0.02 of Tsh. 270,000 from 36% of Tsh. 50,000.

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3. (a) Find the value of  $500 \text{ cm} + 3150 \text{ mm} + 3.5 \text{ m}$ . (Give the answer in metres).

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- (b) Find the number of years in which Tshs. 20,000 will earn an interest of Tshs. 4,800 if the interest rate is 4% per annum.

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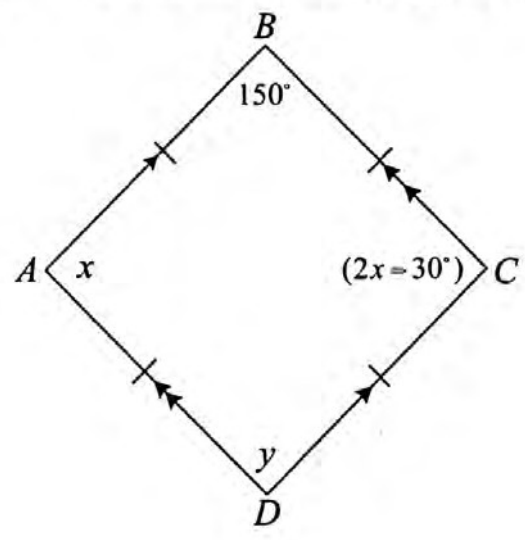
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4. (a) (i) Write the name of the polygon  $ABCD$  represented in the following figure.







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- (b) Solve the quadratic equation  $x^2 + 7x + 12 = 0$  by using the factorization method.

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6. (a) A line passes through the points A(6, 4) and B(12, 6). Find the slope and the equation of the line.

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- (b) (i) A translation takes the origin to  $(-3, -4)$ . Without drawing, find where it takes  $Q(1,-2)$ .

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- (ii) Find the images of the points A  $(-5, 2)$  and B  $(4, -7)$  after reflection in the  $y$ -axis.

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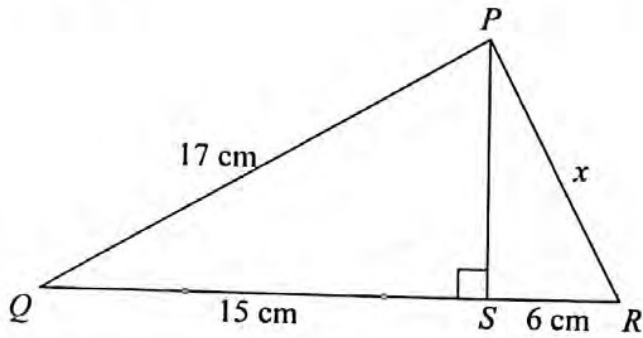
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7. (a) Find the value of  $x$  in the equation  $\left(\frac{1}{3}\right)^{\sqrt{x}} = 81^{-x}$ .

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- (a) In the following figure,  $\overline{PQ} = 17$  cm,  $\overline{QS} = 15$  cm,  $\overline{RS} = 6$  cm and  $\overline{PR} = x$ . Find the value of  $x$ .



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- (b) The angle of elevation of the top of a vertical building from a point on the ground is  $25^\circ$ . The point on the ground is 80 m away from the base of the building. By sketching a diagram representing this information, calculate the height of the building. Write the answer correct to one decimal place.

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- (b) The ages of students selected to participate in a debate competition were recorded as follows:

13    15    17    16    15    14    16    18    17    16  
15    14    13    16    14    17    15    16    15    16

- (i) Prepare a frequency table showing the ages of students and their corresponding frequencies.

(ii) Draw a frequency polygon representing the given information in part (b)(i).

