*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: 2025**

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) Evaluate $\frac{1}{5}$ of $((50 \div 5 + 5) - (8 \times 4 - 2))$.

(b) The population of three towns are 65600, 13400 and 29700 to the nearest hundreds. Approximate the total population of the three towns to the nearest thousands.

2. (a) In a family of 15 children, $\frac{2}{5}$ of them drink tea and $\frac{1}{3}$ of them drink coffee. How many children drink none of the two drinks?

(b) In a class of 40 students, 25 students passed English Language assessment. Find the percentage of students who failed the assessment.

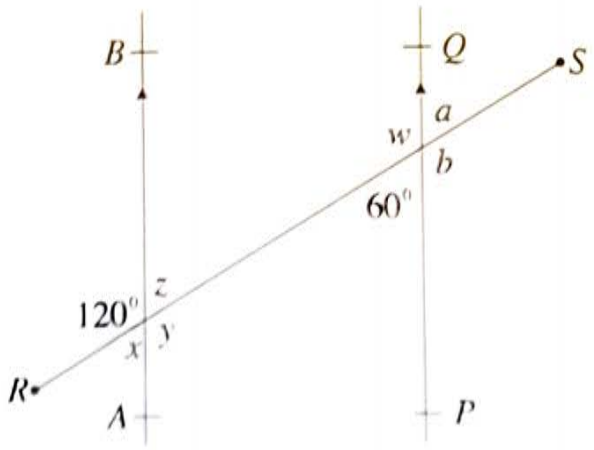
3. (a) A text book was bought at shs. 8,500 and then sold at shs. 6,000. Calculate the percentage loss.

(b) Four families A, B, C and D have to share 33 kilograms of meat in the ratio 4: 5: 6: 7 respectively.

(i) What is the largest share?

(ii) Which family will get the largest share?

4. (a) In the following figure, $\overline{AB}$ is parallel to $\overline{PQ}$ and $\overline{RS}$ is a transversal. Find the angles marked a, b, w, x, y and z.



(b) The perimeter of triangle ABC is $16cm$. If the lengths $\overline{AB} = (5+x)$ cm, $\overline{AC} = (2+x)$ cm and $\overline{BC} = 5$ cm, find the value of x and hence the actual lengths of $\overline{AB}$ and $\overline{AC}$.

5. (a) Simplify the following expressions:

(i) $7m - 2(5n - 4m) + 11n - 5m.$

(ii) $(5x - 2y) - 2(4x - 3y).$

(b) The sum of two numbers is 19 and their difference is 5. Find the numbers.

6. (a) The gradient of the line $ky = kx + x + 7$ is 2.

(i) Find the value of k.

(ii) Write down its y-intercept.

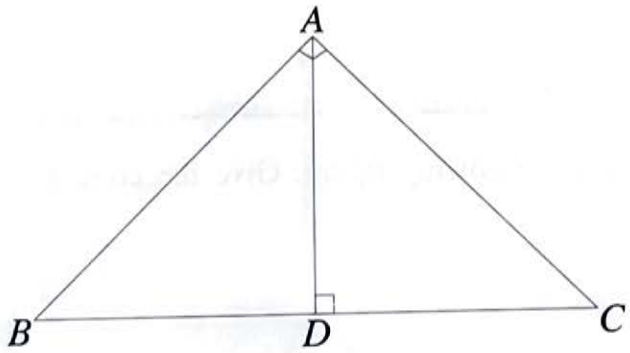
(b) The graph of straight line $Kx - My - 4 = 0$ passes through the points $A(-2,-5)$ and $B(2,-3)$. Find the values of K and M.

8.

7. (a) Find the value of $8^{\left(-\frac{2}{3}\right)} + \frac{3^{-2}}{2^{-3}}$.

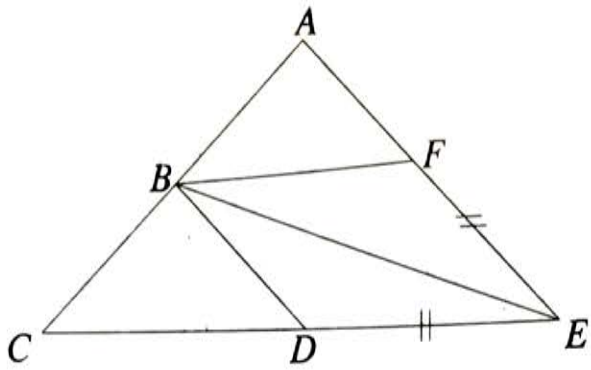
(b) Rationalize the denominator of $\frac{\sqrt{2}}{\sqrt{3}+\sqrt{2}}$.

8. (a) By using the following figure, prove that $\Delta ABC \sim \Delta ABD$.



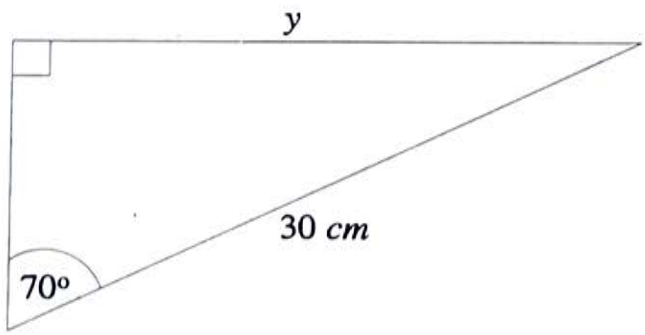
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(b) In the following figure, $\overline{BE}$ bisects $D\hat{E}F$ and $\overline{DE} = \overline{FE}$. Prove that $\Delta BEF \equiv \Delta BED$.



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9. (a) Calculate the length y in the following figure. Give the correct answer to one decimal place.



(b) A ladder on the ground leans against a vertical wall whose height is 5 metres. The ground distance between the ladder and the wall is 12 metres.

(i) Draw a diagram to represent this information.

(ii) By using the diagram in part (b) (i), find the length of the ladder.

10. (a) In a school of 120 students, 40 learn English, 60 learn Kiswahili and 30 learn both Kiswahili and English. How many students learn neither English nor Kiswahili?

(b) The following marks were scored by students in a History test:

54	54	40	55	54	43	73	37	75	47
35	47	73	46	31	43	47	35	35	60
69	54	44	48	55	45	50	37	51	36

Construct a frequency distribution table by grouping the marks in the class intervals 30 – 39, 40 – 49, 50 – 59, etc. Hence find the percentage of students who scored marks ranging from 50 to 69 in the test.