

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                           |       |                     |
| <b>SMARTEDUCATION.CO.TZ</b> |       |                     |
| 6                           |       |                     |
| 7                           |       |                     |
| 8                           |       |                     |
| 9                           |       |                     |
| 10                          |       |                     |
| <b>TOTAL</b>                |       |                     |
| <b>CHECKER'S INITIALS</b>   |       |                     |



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?

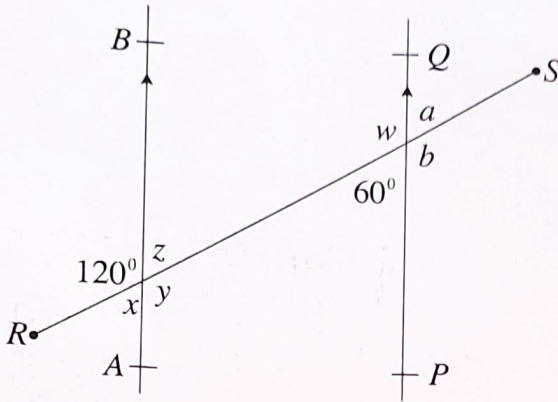
- (b) In a class of 40 students, 25 students passed English Language assessment. Find the percentage of students who failed the assessment.

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

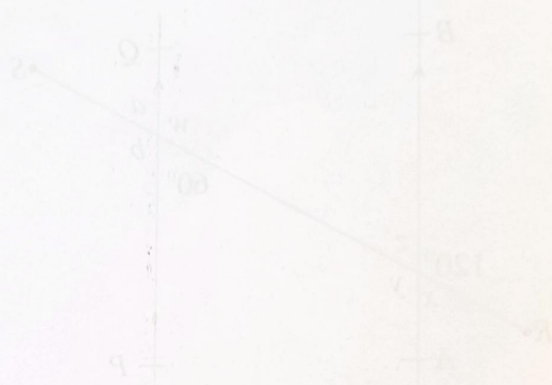
(b) Four families A, B, C and D have to share 33 kilograms of meat in the ratio 4: 5: 6: 7 respectively.

- (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  $16\text{ cm}$ . If the lengths  $\overline{AB} = (5+x)\text{ cm}$ ,  $\overline{AC} = (2+x)\text{ cm}$  and  $\overline{BC} = 5\text{ cm}$ , 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.

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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  $M$ .

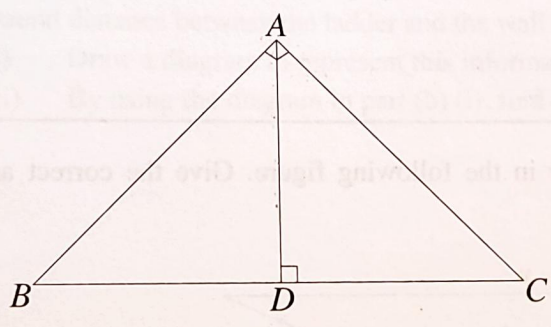
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7. (a) Find the value of  $8^{\left(-\frac{2}{3}\right)} + \frac{3^{-2}}{2^{-3}}$ .

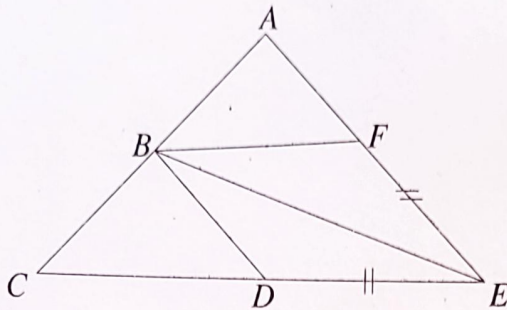
- (b) Rationalize the denominator of  $\frac{\sqrt{2}}{\sqrt{3} + \sqrt{2}}$ .



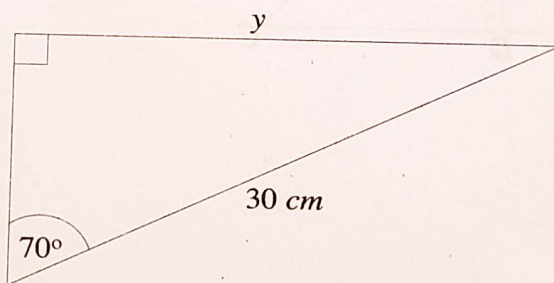
8. (a) By using the following figure, prove that  $\triangle ABC \sim \triangle ABD$ .



- (b) In the following figure,  $\overline{BE}$  bisects  $\hat{DEF}$  and  $\overline{DE} = \overline{FE}$ . Prove that  $\triangle BEF \cong \triangle BED$ .



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



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- (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.

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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?
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(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.