

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

043

**MATHEMATICS
(VOCATIONAL STREAM)
(For Both School and Private Students)**

Duration: 2:30 Hours**Year: 2025****Instructions**

1. This paper consists of **ten (10)** questions.
2. Answer **all** questions showing clearly all the working and answers in the space provided.
3. Each question carries **ten (10)** marks.
4. All writing must be in **blue or black** ink, **except** drawings which must be in pencil.
5. Non-programmable calculators, geometrical instruments and graph papers may be used where necessary.
6. Communication devices and any unauthorised materials are **not** allowed in the assessment room.
7. 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		



1. (a) Covert $2.1\bar{3}$ into fraction.

(b) (i) A village has 150 people, of which 80 are women and the rest are men. What is the ratio of men in the village?

(ii) If $a:b = 21:45$, express $(2a+b):(a+2b)$ in its lowest form.

2. (a) How much is 136 USD worth in Tanzanian Shillings if 1 USD = Tshs 2,650?

- (b) A truck travels 600 kilometres in 10 hours while a bus travels the same distance in 7.5 hours.
- (i) Calculate the speed of each vehicle.

- (ii) Which vehicle travels faster?

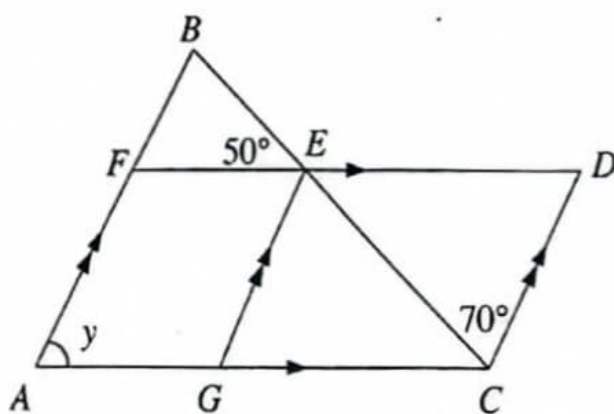
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3. (a) (i) Subtract 35.4 from 234 and give the answer to the nearest hundreds.

- (ii) Estimate the cost of 27 kg of meat sold at Tshs 8,150 per kilogram.

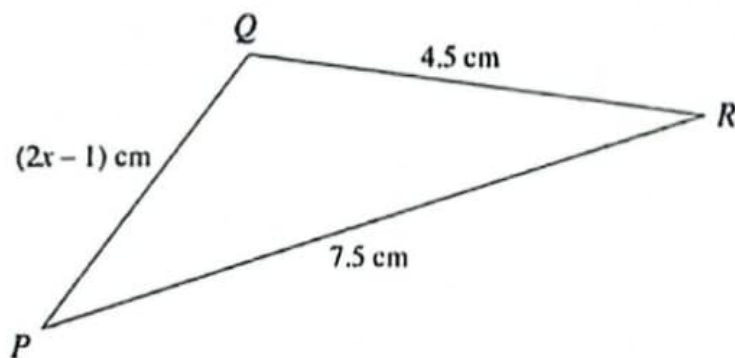
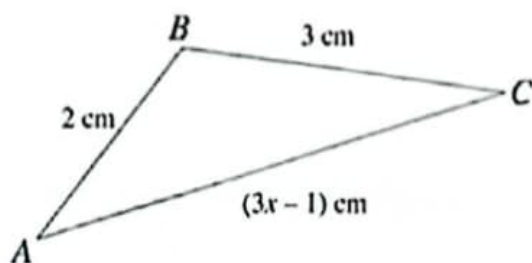
- (b) A vehicle consumes 1.13 litres of fuel to cover a distance of 11.65 km.
 (i) Estimate the rate of fuel consumption of the vehicle in km per litre.

- (ii) Estimate the amount of fuel the vehicle will have consumed if it travelled 35.78 km.

4. (a) Find the value of y in the following figure:



- (b) In the following figures, $\triangle ABC$ is similar to $\triangle PQR$. Find the value of x .



5. (a) Write each of the following numbers in standard form:

(i) 29814

(ii) 0.0136

- (b) Given that $\log 2 = 0.3010$, $\log 3 = 0.4771$, and $\log 5 = 0.6990$, find the value of $\log 90$.

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6. (a) Solve the inequality $\frac{2x+8}{-3} < 20$.

- (b) Find the solution of the following simultaneous equations by elimination

method:
$$\begin{cases} a + 2b = 1 \\ 3a - 4b = 8 \end{cases}$$

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7. (a) How many subsets does each of the following sets contain?

(i) $A = \{a, b, c\}$

(ii) $B = \{1, 2, 3, 4\}$

- (b) Given the universal set $\mu = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ and the subsets $P = \{1, 2, 3, 4, 5, 6\}$ and $Q = \{5, 6, 7, 8\}$. Find;

(i) $P' \cap Q$

(ii) $P' \cup Q'$

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8. (a) Draw Venn diagrams and shade the regions representing the following sets:

(i) $X \cup Y$

(ii) $X \subset Y$

- (b) In a certain meeting, 40 people drank water, 70 drank soda and 35 drank both water and soda. Assuming that each person drank water or soda, use a formula to find the number of people who attended the meeting.

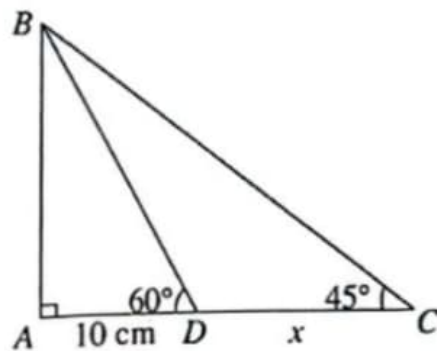
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9. (a) Find the gradient of a straight line passing through the points A (1, 3) and B (4, 5).

- (b) Solve graphically the following pair of simultaneous equations:

$$\begin{cases} 2x + y = -5 \\ -x + y = -2 \end{cases}$$

10. (a) (i) Use $\sin \theta = \frac{4}{5}$ to find the values of $\cos \theta$ and $\tan \theta$.

- (ii) Find the value of x in the following figure (Leave the answer in surd form):



- (b) A painter needs to reach a point 4 m high on the vertical wall using a ladder whose length is 4.5 m. Find the angle of elevation the ladder makes with the horizontal ground (Express the answer in one decimal place).