Candidate's Examination Number.....

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

041 **BASIC MATHEMATICS**

Time: 2:30 Hours **Wednesday, 16th November 2016 a.m.**

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. Four figure mathematical tables, geometric instruments and graph papers may be used where necessary.
5. **All** communication devices and calculators are **not** allowed in the examination room.
6. Write your **Examination Number** at the top right corner of every page.

FOR EXAMINERS' USE ONLY		
QUESTION NUMBER	**SCORE**	**EXAMINERS' INITIALS**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		

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1. (a) Calculate the sum of prime numbers between 70 and 90.

(b) If $x = 6$, $y = -14$ and $z = 16$, find the value of $z\left(\frac{x-y}{y+x}\right)$.

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2. (a) Lightness, Nancy and Zawadi shared some money. Zawadi got $\frac{5}{11}$ of the money, Nancy got $\frac{7}{12}$ of the remaining money? What fraction of the money did Lightness get?

(b) In a class of 40 students, 5 of them are absent. What percent is present?

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3. (a) A container holds 20 litres of milk. If 50 bottles of milk are needed to fill the container, how many milliltres of milk does each bottle hold? (Use 1 litre = 1,000 millilitres).

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(b) Calculate the following:

(i) $(70kg \quad 49g) - (38kg \quad 950g)$

(ii) $(6km \quad 4m) - (4km \quad 11m)$

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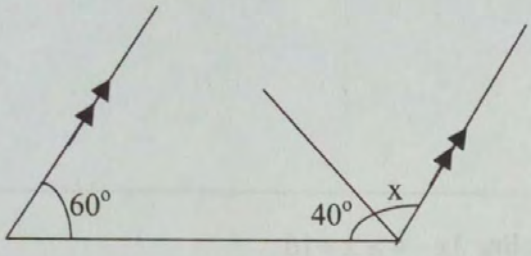
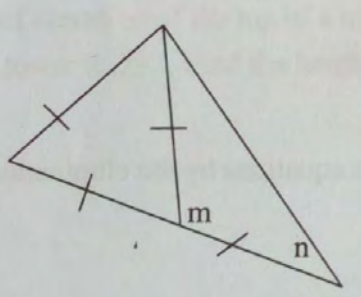
4. (a) Calculate the size of the angles marked ***x*** in the following figure:



(b) Use the following figure to;



(i) find the value of m and n.

(ii) determine the number of triangles.

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5. (a) Solve for x in the inequality $3x - 4 \geq x + 16$.

(b) Solve the following pairs of simultaneous equations by the elimination method.

$$\begin{cases} 2x + y = 10 \\ 3x - 2y = 1 \end{cases}$$

6. In a class of 40 students, 24 students study Geography and 21 students study History. Use Venn diagrams to find the number of students who study both Geography and History.

7. The angle of elevation of the top of a tower from a point on the ground 75 metres from the foot of the tower is 25^{o}. Find the height of the tower to the nearest metre.

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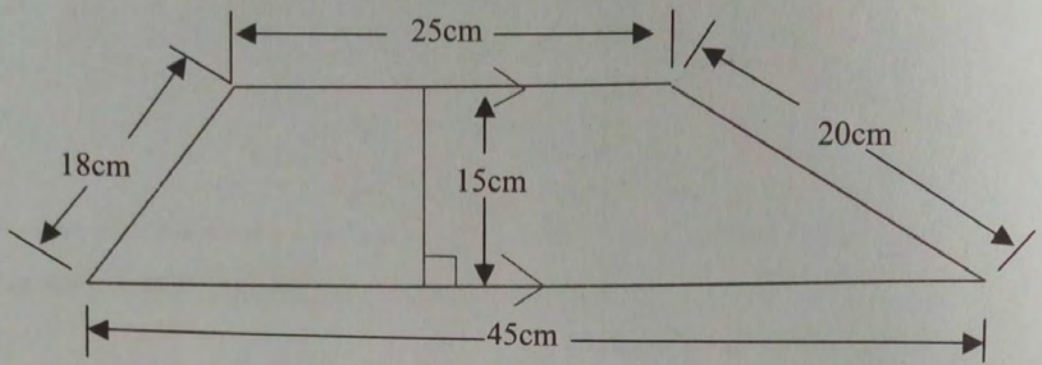
8. (a) Calculate the area and the perimeter of the following trapezium:



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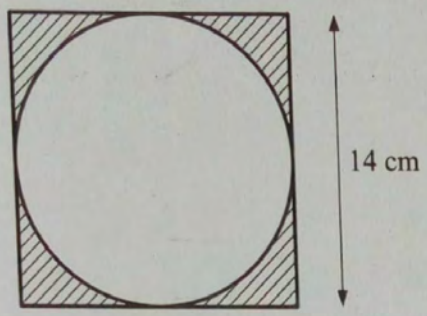
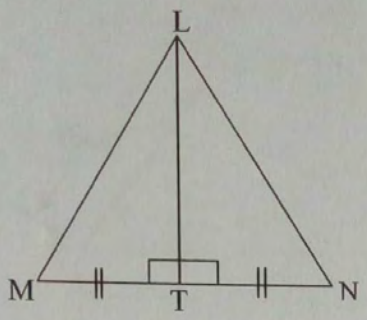
(b) Find the area of the shaded region. (use $\pi = \frac{22}{7}$)



9. (a) Given angle LMT = angle LNT, use the following figure to prove that $\overline{LM} = \overline{LN}$



(b) If $\Delta ABC \sim \Delta PQR$ and $\overline{AC} = 20cm, \overline{RP} = 10cm$, $\overline{RQ} = 12cm$ and $\overline{PQ} = 9cm$, find the length of $\overline{AB}$ and $\overline{BC}$.

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10. The following table shows marks for a Form Two History monthly test:

Marks in %	25	35	40	50	60	65	70	75	80
Number of students	2	3	5	7	11	7	4	2	1

(a) What is the lowest mark?

(b) What is the highest mark?

(c) Which mark is scored by the greatest number of students?

(d) If 60% is the pass mark in the test, how many students failed?

(e) How many students are in form two class?