Candidate's Examination No ……

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

041 **BASIC MATHEMATICS**

Time: 2:30 Hours **Tuesday, 12th November 2019 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, calculators and any unauthorized materials are **not** allowed in the examination room.
6. Write your **Examination Number** at the top right hand corner of every page.

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

1. (a) Find the Greatest Common Factor (GCF) of 18, 24 and 60.

(b) The population of three towns are 65,600, 13,400 and 29,700. Approximate the total population of the three towns to the nearest thousands.

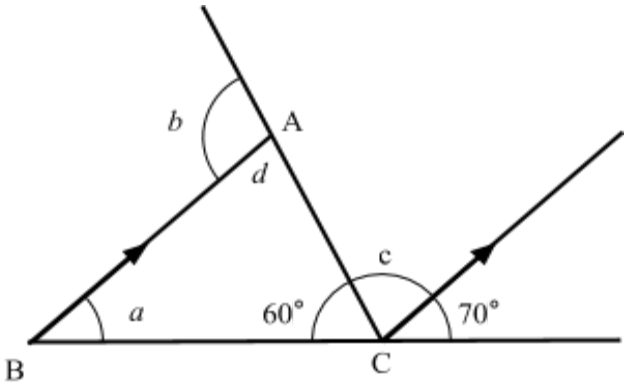
2. (a) Rehema spent 1/8 of her salary on transport and 1/4 on food. If she remained with sh. 80,000, what was her salary?

(b) Change 5/8 into:
(i) percentage.
(ii) decimal.

3. (a) A machine that costs sh. 180,000 was sold at a profit of 40%. Find the selling price.

(b) A father divided sh. 150,000 among Rose and Japheth in the ratio 2:3 respectively. How much money did each get?

4. (a) Use the following figure to find the value of $a + b + c$.



(b) The perimeter of triangle ABC is 16 *cm*. If $\overline{AB} = (5 + x)$ 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) Solve $\begin{cases} x + y = 4 \\ 2x - y = 5 \end{cases}$ by using the substitution method.

(b) Find two consecutive positive numbers such that the sum of their squares is equal to 145.

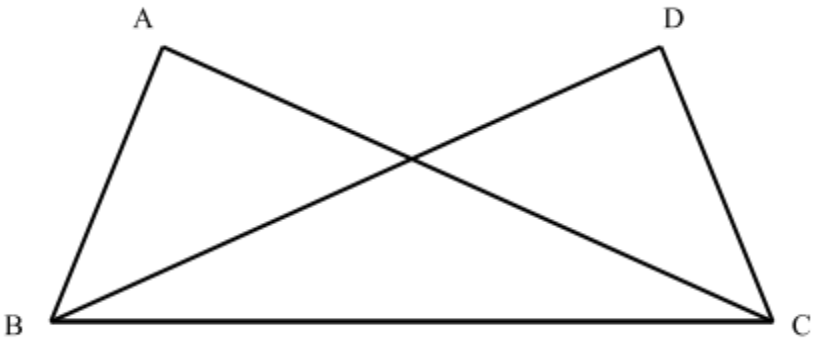
6. (a) If the gradient of the straight line $ky = kx + x + 7$ is 2, find:
   (i) the value of k,
   (ii) the y-intercept.

(b) By using a sketch, find the image of point A(2,3) after a reflection in the line $y = x$ followed by another reflection in the line $y = -x$.

7. (a) Solve for n in the equation $16^{(3-n)} \times 2^{(1+n)} = \frac{1}{2}$.

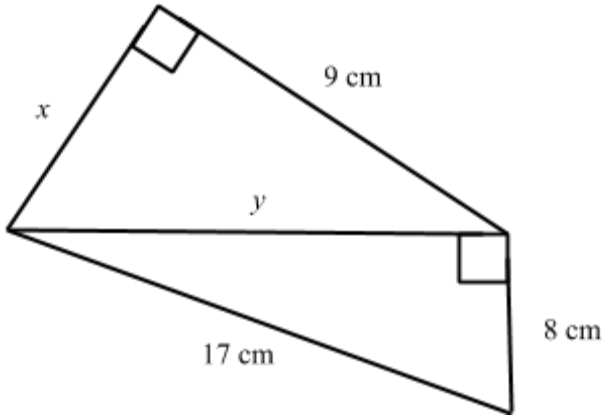
(b) Find the value of x in the equation $\log (2x + 1) + \log 4 = \log (7x + 8)$.

8. (a) In the following figure, $\overline{AB} = \overline{DC}$ and $A\widehat{B}C = D\widehat{C}B$. Prove that $\Delta ABC = \Delta DCB$.



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

9. (a) Use the following figure to find the values of x and y.



(b) Find the value of each of the following expressions and simplify the answer.

(i) $\sin 60°(\cos 45° + \sin 30°)$,

(ii) $\tan 45°(4\cos 60° - \sqrt{3}\tan 30°)$.

10. (a) In a class of 35 students, 21 study commercial subjects, 15 study both commercial and science subjects and 4 students study science subjects only. Use a Venn diagram to find the number of students who study:
    (i) either science or commercial subjects.
    (ii) neither science nor commercial subjects.
    (iii) commercial subjects only.
    (iv) science subjects.

(b) The following pie chart represents the distribution of form two students who were selected to participate in sports activities. If there are 200 students who were selected, how many students participate in each activity?

