HOME PACKAGE MATHEMATICS

FORM I & II

1. Only four tyres of big animals are found in a section of a game reserve. In one month, there were 637 lions, 76, 482 antelopes, 2,982 giraffes and 9,780 elephants counted. How many big animals are there in that section of the game reserve that moth?
2. John bought oranges at the market. He ate four oranges and gave the rest to his friends. He gave Jane three oranges, Bokari five oranges and Mumba six oranges. How many oranges did John buy from the market?
3. There were 66 people on a bus. At the first stop, 28 people got off and 19 people got on. At the next stop, five people got off and 13 people got on. At the next stop. How many people were there on the bus now?
4. The product of two numbers is 912, and one of the numbers is 24. Find the other number.
5. The product of three numbers is 2,730. Two of the numbers are 13 and 15. Find the other number.
6. A fleet of 28 buses was used to take 990 people to a football match. Two of the buses carried 40 people each, and the rest all carried the same number of people. How many people did each of the other buses carry?
7. A city of 534,000 people is split into ten equal wards. How many people are there in each ward?
8. An American dollar contains about 1,000 Tanzanian shillings.
   a) How many Tanzanian shillings are there in 74 dollars?
   b) How many dollars are 78,00 Tanzanian shillings?
9. a) Write the equation of a line which crosses the x – axis at (-8,0) and the y – axis at (0,3) in the form ax + by + c = 0
   b) Find the coordinate of the point of intersection of line A whose equation is x = 3 and line B whose equation is 2x – 5y = 7
10. A BC is a parallelogram in which angle ABC = 42^0. find the degree measure of angleBCD.
11. The profit on an item costing Tsh 8,000/= is decreased by Tsh 480/= when its sells price is reduced by 5%. Find
    a) The sell price b) Percentage profit before reductions

12. A local club is open every day of the week. Esther, Amina and Upendo visit the club together one Saturday. After that, Esther visit it every second day, Amina visits it every third day and Upendo visits every fifth day
    a. After how many days will they be at the club together again?

b. What day of the week will that be?

13. A red light flashes on every 10 seconds. A green light flashes on every 8 seconds. How many seconds are there between the times when both lights flash on together?
14. Robert Msaki is making some small metal rods. He has three pieces of metal of length432 cm, 648 cm and 540 cm. what is the longest length of rod he can make if the rods have the same length and no metal is wasted?
15. At the local running track, three athletes are doing training laps. Iddi laps once every 56 seconds, Bakari laps once every 66 seconds and Juma laps once every 77 seconds. If they all start together how long will it be before they are all together at the startline?
16. Solve the inequality $\frac{5x-2}{3} \geq \frac{3x}{4} - \frac{1}{2}$
17. The degree measure of two supplementary angles are in the ratio 2:3. Find degree measure of each angle.
18. Find the length of the sides of a cubical box (open on one side) which has a total surface area of 720 cm^2
19. Find x and y such that $\frac{7}{4x} - \frac{1}{2y} = \frac{3}{x} + \frac{2}{y} = -8$
20. Use the digits 1,2,4 and 4 without repetition to form 2 – two digit numbers and find
    a) The largest sum. b) The largest difference of the numbers that can be formed.
21. The LCM and GCF of three numbers are respectively 360 and 3 if two of the numbers are 18 and 24, find the third number
22. The sides of a rectangle are in the ratio 2:3, if the perimeter of this rectangle is 74.5cm. find its area to two significant figures
23. Two pipes, one with internal diameter of 30 mm and another 40 mm, runs into a larger pipe. Find the internal diameter D of the large pipe that will enable it carry all the water from the small pipes.
24. The radii of two circles are in the ratio 2:5. If the area of the larger circle is 420 square cm, find the area of the small circle.
25. A regular decagon
26. who's each side is 2.5cm is inscribed in a circle. Find the radius of the circle and the area between the circle and the decagon.
27. A cylindrical can contains 1100cm^2 of pineapple juice when full. If the can is 14cm in height, what is its radius?
28. The angle of elevation of the top of a chimney on a house from a point on the ground 50 m away is 22^0
    a. How high above the ground is the top of chimney?
    b. If the angle of elevation of the roof of the house from the same point is 20^0, how tall is the house?

c. How high is the chimney?

29. The scale map is 1:10000
    a. Two rivers are 4.5cm apart on the map, how far apart are they in real life
    b. Two towns are 8km apart in real life. How far apart are they on the map? Give the answer in centimeters.
30. a) Describe three types of triangles that are classified by their sides

    b) The formula for finding the total surface area ofis A = $2\pi r^2+2\pi rh$ where r is the radius of the base and h is the height. Solve the formula for h and justify each step.
31. a) Find two numbers whose different is 5 and whose product is 266.

    b) Find the value of angel A in the following, giving your answer correct to one decimal place if it is not exact: Tan A = 4.371.
32. a) In a class of 31 students, some study physics and some study chemistry. If 22 study physics, 20 study chemistry and 5 study neither. Calculate the number of students who take both subject.

    b) The angle of elevation of the top of a cliff from a ship at sea level is 12.3^0. if the ship is 2.3 km out at the sea level from the cliff, find the height of the cliff in metres correct to 3 significant
33. If salaries were increased by 7.5%, what is the new salary of Asha whose salary was Tsh 120,000/=
34. A fruit seller bought some oranges for Tshs.2400. he noted that, 12 of the oranges were spoilt by insect and thrown away. The rest were offered for sale at 3 for Tshs. 100.
    a) How many oranges did he buy if he made a profit of $16\frac{2}{3}$% when all the oranges were sold?
    b) How much money did he get?
    c) How many oranges were offered for sale?
35. a) A metal is composed of copper and zinc in the ratio 3:2 by volume. Find the volume of a piece of the metal which contains $42cm^3$ of copper.

    b) A person borrows Tshs. 40,000/= for a period of 6 years at 20% simple interest per annum.

    Calculate the total amount to be repaid.
36. a) A water – can holds $12\frac{1}{2}$ litres. It is filled 11 times from a tank containing 400 litres. How much water is left in the tank?

    b)25% of a consignment of a fruit was bad. If 1500kg was good, how much did the consignment weight?
37. a) How much length of tape, each 75 cm long, can be cut from a real 10 m long? What is the length of the piece left over?

    b) Find the length of time between 0425 hours and 06.12 p.m.

37. a) Find the coordinates of the points where the line represented by the equation

4x – 3y = 12 cross the axes.

b)Find the equation of the straight line, which passes through the point Q(-1,7) and R (3, -2)

38. a) A woman is 10 times as old as her son. In 6 time she will be 4 times as old as her son. Find their present ages. (Hint: let the son's present age be x years)

b) A circle has an area of 154cm^2. Find the perimeter of the circle. (Take $\pi = \frac{22}{7}$)

39. a) Find two consecutive even numbers such that 3 times the smaller added to 8 times the greater comes to 170

b) In a regular polygon, each interior angle is greater by 140^0 than each exterior angle. How many sides have the polygon?

40. A woman sells 60 cabbages, 45 carrots and 80 tomatoes. Write down each of the following ratios in the simplest form:

a) The number of tomatoes to the number of carrots

b) The number of cabbages to the number of tomatoes

c) The number of cabbages to the number of carrots

41. Three English books and four mathematics books cost Tshs. 780, while two English books and three mathematics books cost Tshs. 560.

a) Find the cost of an English book
b) Find the cost of a mathematics book

42. Robert, William and Eusebius share some money. Robert gets $\frac{5}{10}$ of the money. William gets $\frac{7}{12}$ of the reminder.

a) What fraction of the money does Eusebius get?

b) What fraction of the money does William get?

43. The distance between two towns is x km. express the following in terms of inequalities, and solve them

a) If I get a bus for 20 km, there will be still at least 40 km to travel.

b) If you give me a lift for 40 km, there will be less than 20 km to travel

44. A certain book has mass x grams. Express the following in terms of inequalities and solve them.

a) The mass of ten books is less than 2000 grams

b) The mass of five books, together with a bag of mass 100 grams, is at least 1300 grams.

45. A stone is thrown upwards. After t seconds its height h metres is given by $h = 30t - 5t^2$. Find the times when the stone is 25 m high

46. The areas of the Atlantic and Pacific oceans are about 8.22 x 10^7km^2 and 1.65 x 10^8km^{2}respectively. Which is larger?

47. The density of a metal is 1.7 x 10^4 kg per m^3. What is the mass of 3 x 10^4 m^3 of the metal? (Remember: density is mass divided by volume.)

48. About three-quarters of the mass of the sun is hydrogen. The mass of a hydrogen atom is about 2 x 10^{-28} kg. the mass of the sun is about 1.8x 10^{21} kg. how many hydrogen atoms are there in the sun? 2 x 10^{-28} kg. How many hydrogen atoms are there in the sun?

49. The gradient of a steep mountain path is 1 in 4, which means that the vertical rise is $\frac{1}{4}$ of the horizontal run. Amina walks along the path, rising 15cm.

a) How far has she gone horizontally?
b) How far has she walked along the path?

50. A pendulum is 100cm long. It is pulled aside, so that the bob at the end has moved 10 cm horizontally. By how much has the bob risen?