**MATHEMATICS PAPER 1**
**MOCK EXAMINATION**
**MARCH/APRIL 2019**
**TIME: 2 ¼ HOURS**
**INSTRUCTIONS TO CANDIDATES**

1. Answer **ALL** questions in section A.
2. Answer any **FIVE** questions in sections B.
3. Show all your working in the spaces provided after every question.

**FOR OFFICIAL USE ONLY**

| SECTION | QUESTION | MAX SCORE | SCORE |
|---|---|---|---|
| A | 1- 20 | 60 | |
| B | 21 | 8 | |
| | 22 | 8 | |
| | 23 | 8 | |
| | 24 | 8 | |
| | 25 | 8 | |
| | 26 | 8 | |
| **TOTAL SCORE** | | | |

**SECTION A**

***Answer** ALL **questions in this section.***

1. Evaluate and give your answer correct 2 decimal places.
   $\frac{0.64 \times 3.5}{0.009 \times 0.8}$ (3 marks)
2. A plot of land measures10m by 55m. If the longer side of the plot is reduced by 5% what would be percentage decrease in the area of the plot? (3 marks)
3. The level of water in a tank was 0.35m. After drawing 28.4 litres of the water from the tank, the level became 0.27m. How many litres did the tank contain when the level of water was 0.75m? (3 marks)
4. In a certain function, the ration of men to women to children was 3:4:7. There were 252 people all together. Calculate the new ratio if 10 more men 8 more women and 2 more children joined the group. (3 marks)
5. Evaluate: $\frac{\frac{1}{2} \div 2\frac{2}{3} + 2\frac{1}{4}}{\frac{13}{15} \text{ of } 33\frac{1}{3}}$ (3 marks)
6. Convert the following recurring decimal to a fraction in its simplest form. (3 marks)

   $0.\dot{3}\dot{4}\dot{8}$

7. Find the value of y in the inequality.
   $3(2y - 4) - 5 \geq 4(y-3) + 3y$ (3 marks)
8. Solve the equation $2x^2 - 11x + 12 = 0$ using factorization method. (3 marks)
9. What is the value obtained when L.C.M of the numbers 24, 30 and 54 is divided by the G.C.D of the same numbers? (2 marks)
10. The population of a town is 694,560. The number of women is 7824 more than the number of men. The total number of men and women is three times the number of children. How many women are there?

    (4 marks)
11. A father shared a third of his piece of land among his three children, mwangi, Swale and Nyangweso. Mwangi received ½ of the part while Swale received ¼ of the remainder. The rest of the part was given to Nyangweso. Find the fraction of the piece of land that Nyangweso got.

    (3 marks)
12. The length of a rectangular plot is (x+3) meters. The width of the plot is 5 meters less than the length. If the area of the plot is $84m^2$, calculate the width of the plot.

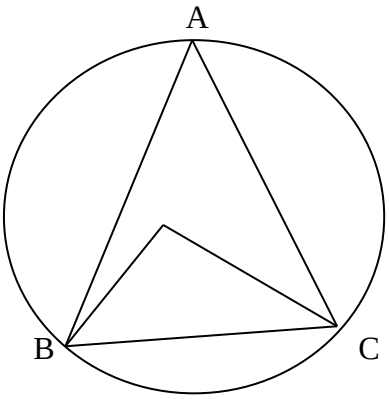
    ( 4 marks)
13. Find the value of x + y if $x = 2.4 \times 10^{-3}$ and $y = 5 \times 10^{-5}$
    Give your answer in standard form. (2 marks)

14. A cylindrical block of metal has a diameter of 28cm and a height of 12cm. The block is melted and recast into a rectangular block 32cm long and 15cm wide. Calculate the height of the block. (Take $\pi = \frac{22}{7}$) (3 marks)
15. By selling an article of sh170 a shopkeeper made a loss. Had the shopkeeper sold the article for sh.220, she would have made a 10% profit. Determine the percentage loss.

    (3 marks)
16. The area of a piece of land on a map whose scale is 1:100,000 is $3.7cm^2$. Calculate the area of the same piece of land on a map whose scale is 1:50,000.

    (3 marks)
17. In one year a school had 750 pupils. The ratio of girls to boys was 7:8. In the following year, the number of girls increased in the ration 11:10 while the number of boys decreased in the ratio 19:20. Determine the total number pupils that year. (3 marks)\

18. In the figure below O is the centre of the circle. Angle BAC = $64^0$ and angle OCA = $22^0$. What is the value of angle ABC? (3 marks)




19. Make V the subject of the formula (3 marks)

$$t = \frac{2x - v}{x + 3v}$$

20. The mean mark of six subjects for a candidate in an examination was 57 marks. The marks for five subjects were 50, 61, 45, 81 and 70. What was the median mark for the six subjects? (3 marks)

**SECTION B**

***Answer FIVE questions ONLY in this section.***

21. The marked price of a washing machine is ksh.30,000. The hire purchase price of the same machine is 125% of the marked price. Atieno bought the washing machine on hire purchase terms by paying a deposit plus 10 equal monthly installments of ksh.2,500 each.

(a) How much did Atieno pay as deposit? (2 marks)

(b) Masai bought the machine on cash basis by taking a loan from a bank charging a compound interest at a rate of 20% per year for 2 years. How much did it cost him? (4 marks)

(c) Who paid more and by how much? (2 marks)

22. Below are masses in kilograms of 19 students in a class of twenty.
44, 42.0, 60, 59.5, 55, 41, 46.5, 47, 55, 59, 43, 45, 49, 61, 44, 50, 48, 53, 62.

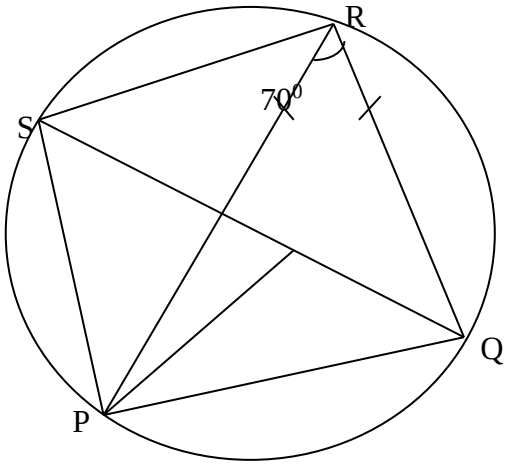
(a) What is the mean mass of the nineteen students? (2 marks)

(b) If the mean mass of the 20 students is 51kg, what is the mass of the twentieth student? (2 marks)

(c) What is the modal mass? (2 marks)

(d) Find the median mass of the whole class. (2 marks)

23. The figure below shows a circle centre O and a cyclic quadrilateral PQRS, PR=RQ, angle PRQ=$70^0$ and QOS is a straight line. Giving reasons for your answer find;




(a) Angle PRS (2 marks)
(b) Angle POQ (2 marks)
(c ) Angle RPS (2 marks)
(d) Angle PSR (2 marks)

24. There are 85 schools in a sub county. Each school requires extra classroom building and equipping one classroom costs sh.150,000. The community contributed money towards this project as follows:-
Every man sh.100
Every woman sh.50
Every pupil sh.5
There are 17,500 men, 18,200 women and an average of 1,000 pupils per school.
(a) What was the total amount needed for building and equipping all the classrooms? (2 marks)
b) How much money did the community expect to raise? (4 marks)
(c ) How much extra will the community need? (2 marks)

25. Three people A, B and C joined a business and invested money as follows;
A invested sh.50,000 for a duration of 12 months;
B sh. 60,000 for 9 months and C sh.30,000 for 7 months. The business realized a profit of sh.60,000. If members shared ¾ of the profit in the ratio of their contributions and time, how much did each get? (8 marks)

26. Use a ruler and a pair of compas0ses only to construct triangle ABC in which AB=5cm, Ac=10cm and angle BAC =$37\ \frac{1}{20}^0$.
Construct a perpendicular from point C and let it meet line AB extended at P. Determine area of triangle ABC. (8 marks)