**STEPHJOY GIRLS HIGH SCHOOL**

**FORM THREE MATHEMATICS HOLIDAY ASSIGNMENT**

**NAME..............................................................ADM..................CLASS...........**

1. Evaluate: (3 marks)

$$\frac{-12 ÷\left(-3\right)×^{-}1(-15)}{-5×6÷2+(-5)}$$

1. Find the greatest number which when divided by 181 and 236 leaves a remainder of 5 in each case. (3 marks)
2. Simply without using a calculator. Leaving your answer as a fraction in the simplest form

 (3 marks)

$$\frac{3×3\frac{2}{5}-2×2\frac{1}{3}}{3\frac{2}{5}+2×2\frac{1}{3}}$$

1. Convert $0.2\dot{3}$ to a fraction (2 marks)
2. Three consecutive odd numbers add up to 369. Determine the three numbers (2 marks)
3. A cyclist rode round a roundabout twice. He covered a distance of 840m. What is the radius of the roundabout? (4 marks)
4. A section of a road is 3080m long. One fifth of it is earth road and $\frac{1}{7}$ is tarmac. Find the difference in length between the two stretches. (3 marks)
5. Find the value of each of the angles marked by a letter. (3 marks)

Y0

420

X0

3X0

1. Mambo bought 3 exercise books and 5 pens for a total of Ksh 165. If mambo had bought 2 exercise books and 4 pens, he would have spent Ksh 45 less. Taking x to represent the price of an exercise book and y to represent the price of a pen:
2. Form two equations to represent the above information (1 mark)
3. Find the price of an exercise book and that of two pens (3 marks)
4. The size of an interior angle of a regular polygon is 6$\frac{1}{2}$ times that of its exterior angle. Determine the number of sides of the polygon (3 marks)
5. The sum of interior angles of a regular polygon is 18000. Find:
6. The number of sides of the polygon (2 marks)
7. The size of the exterior angle (2 marks)
8. A car uses 1 litre of petrol for every 6 kilometers. The car was to travel 480 kilometers and had 15 litres at the beginning of the journey. Each litre costs sh. 58.00.
9. How much more petrol did the car need in order to just complete the journey? (2 marks)
10. How much did the fuel cost? (2 marks)
11. A Kenyan bank buys and sells foreign currencies as shown below:

|  |  |  |
| --- | --- | --- |
| Currencies | Buying (Ksh) | Selling (Ksh) |
| 1 Sterling pound (£) | 130.10 | 130.54 |
| 1 South African Rand | 9.52 | 9.58 |

A businessman on a trip to Kenya had £50,000 which he converted to Kenya shillings. While in Kenya, he spent 80% of the money and changed the balance to South Africa Rand. Calculate, to the nearest Rand, the amount to he obtained. (3 marks)

1. Using a ruler and a pair of compass only, construct a rhombus PQRS such that PQ = 6cm and <SPQ = 750. Measure the length of PR. (4 marks)
2. A salesman gets a commission of 2.4% on sales up to sh.100,000. He gets an additional commission of 1.5% on sales above this. Calculate the commission he gets on sales worth sh.280,000 . (3 marks)
3. In a fund-raising committee of 45 people, the ratio of men to women is 7:2. Find the number of women required to join the existing committee so that the ratio of men to women is changed to 5:4 (3 marks)
4. A circular pond of diameter 40m is surrounded by a path 2m wide. Calculate the volume in m3 of murram required to gravel the path to a depth of 7.5cm. (3 marks)
5. A floor is covered by 7,680 square tiles of length 25cm. These tiles are to be removed and replaced with square tiles of length 40cm.
6. How many of the new tiles are required? (2 marks
7. If each new tile costs sh. 125, how much will the new tiles cost? (2 marks)
8. Find the perimeter of the shape below (3 marks)



3m

3m

3m

3m

1. PQRS is a parallelogram in which PQ = 3cm, QR = 12 cm and the perpendicular from Q to PS is 2.5 cm. Find the length of the perpendicular from P to RS (3 marks)
2. 1 kg of sugar, density 1.1g/cm3 and 0.25kg of salt, density 1.2g/cm3 are mixed together for a certain experiment. What is the density of the mixture? ( Give the answer to 4 s.f)

 (3 marks)

1. A bus left town P at 5:30 p.m and arrived at town Q at 11:00 p.m. where it stayed for $\frac{3}{4}$ hours. The bus then journeyed from town Q to town R, taking 6$\frac{1}{2}$ hours
2. How long did the whole journey take from P to R? (2 marks)
3. At what time did the bus arrive at R. (1 mark)

23 . Write each of the following in standard form:

1. 0.0000025681 (1 marks)
2. 24506 (1 marks)

24. Simplify: (3 marks)

 $\frac{0.0165 x 12.75}{0.25x0.0075}$

25. Express the following decimals as fractions:

1. 0.$\dot{3}\dot{7}$ (3 marks)
2. 7.3$\dot{6}$ (3 marks)

26. Factorize: (3 marks)

 3ad + 12bd – 12bc – 3ac

27. A group of people go for an excursion in x cars. If y of the cars carry 4 people each and the rest 5 people each, how many people are there in the group? (3 marks)
28. Find the ratio p:q:r given that p:q = $\frac{1}{4}$ : $\frac{1}{3} $and q:r = $\frac{2}{3}: \frac{3}{5}$. (3 marks)

29. . A certain bronze alloy is made up of 95 parts of copper, 4 of tin and 1 of zinc. Find the mass of each of the metals in 185kg of bronze. (3 marks)

30. Find the length of a cube whose surface area is 162.24. (3 marks)

31. Mwangi is 10 years older than his brother Nderitu. Find an expression in terms of Mwangi’s age, for

a) the sum of their ages

b) the sum of their ages in 5 years time.

c) the product of their ages 3 years ago. (5 marks)

32. Three men working 10hours a day can do a certain job in 8 days. How long would 2 men working 1 hours a day take to do the same job? (3 marks)

34. Nineteen men working 7.5 hours a day re-carpeted a section of road in 21 days. How many hours a day must 45 men work in order to re-carpet a similar section of the road in 7 days? (3 marks)

35. 1kg of sugar density 1.1g/cm3 and 0.25kg of salt density 1.2g/cm3 are mixed together for a certain experiment. What is the density of the mixture. (4 marks)

36. Use tables to find the value of:

1. 4052 (3 marks)
2. $\sqrt{15.25}$ (2 marks)

37. Use factor method to find the square root of:

1. 196 (3 marks)
2. 324 (3 marks)

38 Evaluate

  (3 marks)

39 Two pipes, P and Q can fill an empty tank in 3 hours and 4 hours respectively. It takes 5 hours to fill the tank when an outlet pipe R is opened the same time with the inlet pipes. Calculate the time pipe R takes to empty the tank. (3 marks)
 40. The length of a rectangle is 3m longer than the width. If the perimeter of the rectangle is 26m. Calculate:

1. The length of the rectangle (3 marks)
2. Area of the rectangle (2 marks)

41. The length of a rectangle is 3$\frac{1}{2}$ cm and its breadth is 2$\frac{7}{8}$ cm. find:

1. Sum of all the sides (2 marks)
2. The product of length and breadth (2 marks)

42. Simplify: (4 marks)

 $\frac{3}{5}÷\frac{2}{3}-\frac{1}{6}x\frac{7}{12}$ of ($\frac{1}{2}+\frac{4}{5})$

43. On a certain day, the temperatures at top of Mount Kenya were -10°c and down at Mombasa it was +35°c. What was the difference between the two temperatures?

44. Twenty four men each working 10 hours a day take 4 days to complete a piece of work. How many more days will it take 15 men each working 8 hours a day to complete the same piece of work. (3 marks)

45. Three bells P, Q and R are programmed to ring after an interval of 15 minutes, 25 minutes and 30 minutes respectively. If they all rang together at 8.45 a.m, when will they next ring together simultaneously? (3 marks)

46. A Kenyan bank buys and sells foreign currencies as shown below:

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