INTERNATIONAL INDIAN SCHOOL, RIYADH

CLASS: IX SA2: MATHEMATICS WORKSHEET – (2015-16)

TOPIC : LINEAR EQUATIONS IN TWO VARIABLES

1. If the point (4,5) lies on the graph of $4y = cx – 8$, find the value of c.
2. Express $-5x = 36 – 3y$ in the form of $ax+ by + c = 0$ and indicate the values of a ,b and c
3. A fraction becomes 2/5 when 2 is added to the numerator and 5 is subtracted from the denominator. Represent this situation as a linear equation in two variables. Also find its two solutions.
4. If (m, 2m + 1) is a solution of the equation $3x – 5y = 8$, find the value of m.
5. Express the equation $y = 7x – 2$ in the standard form and find two solutions. Draw the graph of this equation. Also check whether the point (2 , 11) is a solution.
6. Express x in terms of y, given that $7x – 3y = 15$. Check if the line represented by the equation intersect the Y – axis at $y = \bar{5}$.
7. Draw the graph of the equation $5x – 2y = - 10$. Also find the coordinates of the point where the graph cuts the X- axis.
8. Draw the graphs of the equations $3x + 4y = 7$ and $3x – 2y = 1$. Find the point of intersection of these lines.
9. Give the geometrical representation of the equation $3y = -7 + y$ as an equation
   i. In one variable
   ii. In two variables.
10. Write three equations of the lines which passes through a point (-3, 5).How many such lines are there?
11. Draw the graph of the equation $3x + y = 3$. How many solutions of the given equation are possible? Name the figure formed by the given line and coordinate axes. Also find the area of this figure.
12. Without drawing , find the point at which the graph of the equation $5x + 7y = 40$, cut the X-axis.
13. On her birthday Priya distributed chocolates in an orphanage. She gave 5 chocolates to each child and 20 chocolates to adults. Taking number of children as x and total chocolates distributed as y.
    a .Form a linear equation.
    b. If she distributed 145 chocolates how many children are there in the orphanage?
    c. Explain the value depicted here by Priya.

14. Linear equation $x – 4 = o$ is parallel to which axes?

15. The graph of $y = mx$ is a straight line passing through the _____.

16._____ is the point at which the equation $4x – 7y = 8$, meets the Y – axis.

17. The equation $x = 4$ can be written in two variable as _____.

18. If (5, 2) is a solution of $5x – ky = 5$, then k = _____.

19. $x = 2, y = 1$ is a solution of $2x + 3y = 8$, True/ False.

20. The coordinates of a general point on the Y – axis is _____, X-axis is_____and the origin is_____.

TOPIC: SURFACE AREAS AND VOLUME

1. Find the L.S.A, T.S.A and volume in liter of the cuboids whose dimensions are
   a. l = 7 cm, b = 0.57 dm, h = o.14 m [294.4 cm^2 , 435.4 cm^2 , 0. 5586 liter]
   b. l = 7 m 30 cm, b = 3 m 60 cm, h = 1 m 40 cm [62.64 cm^2 , 83.08 cm^2 , 36792 liter]
   c. l=18 m, b = 4.5 m, h = 5 m [207 m^2 , 387 m^2 , 405000 liter]
2. Find the L.S.A, T.S.A and volume of the cylinder whose dimensions are
   a. r = 3.5 m, h = 10 m [220 m^2 , 297 m^2 , 385 m^3]
   b. d = 3.5 dm, h = 16 dm [176 dm^2 , 195.25 dm^2 , 154 dm^3]
3. Find the L.S.A, T.S.A and volume of the cone whose dimensions are
   a. r = 7 cm, l = 25 cm [550 cm^2 , 704 cm^2 , 1232 cm^3]
   b. r = 5.25 m, h = 3 m [99.825 m^2 , 186.45 m^2 , 86.625 m^3]
4. Find the T.S.A and volume of the sphere whose radius r = 1.75 m [38.5 m^2 , 22.458 m^3]
5. Find the L.S.A, T.S.A and volume of the hemisphere whose diameter, d = 21 m
   [693 m^2 , 1039.5 m^2 , 2425.5 m^3]
6. The dimensions of a cuboid are in the ratio 2: 3 : 4 and its total surface area is 208 sq. m Find its dimensions. [4 m, 6 m , 8 m]
7. Five cubes each of edge 3 cm are joined end to end. Find the S.A of the resulting cuboid.
   [198 cm^2]
8. A tank is 12 m long, 8 m wide and 5 m deep is to be made. It is open at the top. Determine the cost of iron sheet at the rate of 3.50 rupees per meter if the sheet is 4 m wide.
   [259 rupees]
9. Find the length of the longest rod that can be placed in a room 24 m x 6 m x 8 m.
   [Hint: find the length of the diagonal = $\sqrt{l^2 + b^2 + h^2}$] [26 m]
10. The length of the diagonal of a cube is $\sqrt{588}$ cm. Find its edge. [14 cm]
11. A cylindrical vessel, without lid, has to be tin- coated both of its sides (ignoring the thickness). If the radius of its base is 5 dm and its height is 1.4 m, calculate the cost of tin coating at the rate of 750 rupees per 1000 cm^2. (use $\pi = 3.14$) [77715 rupees]

12. The volume of a sphere is 905 1/7 cm^3. Find its surface area. [452.16 cm^2]

13. A hemispherical bowl of internal diameter 36 cm contains a liquid. The liquid is to be filled in cylindrical bottles of radius 3 cm and height 6 cm. How many bottles are required to empty the bowl? [72 bottles]

14. The height of a cone is 24 cm and diameter of the base is 14 cm. Find the slant height, volume, C.S.A and T.S.A of the cone. [l = 25 cm, 1232 cm^3 , 550 cm^2 , 704 cm^2]

15. The radii of two spheres are in the ratio 2 : 3 Find the ratio of their surface areas and ratio of Their volumes. [4 : 9 , 8 : 27]

16. A right circular cone and a right circular cylinder have the same radii nd the same heights. Find the ratio of their volumes. [1 : 3]

17. The cost of painting 4 walls of the room is 6000 rupees. If the rate of painting is 75 rupees per sq. m and the height of the room is 4 m, find the perimeter of the room. [P = 20 m]

18. The area of canvas required to make a conical tent is 2750 sq. m and its base radius is 14 m. Assuming that 20% of the canvas was wasted in folds, stitching and cutting etc. Find the volume of the air in the tent. [9856 m^3]

19. If the ratio of the surface areas of the Moon and the Earth is 1 : 16, find the ratio of their diameters and the ratio of their volumes. [1 : 4, 1: 64]

20. Find the radius of a sphere whose surface area is equal to the area of a circle whose diameter is 5.6 cm. [1.4 cm]

21. A sphere of diameter 6 cm is dropped in a right circular vessel partly filled with water. The diameter of the cylindrical vessel is 12 cm. If the sphere is completely submerged in water , by how much will the level of the water rise in the cylindrical vessel? [1 cm]

22. The patients in a hospital are given soup daily in a cylindrical bowl of diameter 7 cm. On a particular day the girls of IISR decided to cook the soup for the patients. If they fill the bowl with soup to a height of 5 cm then how much soup is to be cooked for 300 patients? Which value is depicted by the girls? [57.750 litres]

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