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X MATHS TEST ON LINEAR EQUATION IN TWO VARIABLES

TIME: 1 HOUR **M.M. : 30**

1. Standard form of linear equation in two variables are : $a_1x + b_1y + c_1 = 0$ & $a_2x + b_2y + c_2 = 0$. What can you say about a_1, b_1, c_1 , a_2, b_2 and c_2. **1**

2. Following equation represent which type of solution :

    a. $\begin{aligned} 2x + 4y &= 10 \\ 3x + 6y &= 12 \end{aligned}$ b. $\begin{aligned} 3x - y &= 3k \\ 6x - 2y &= 6k \end{aligned}$. **2**

3. Solve for x and y : $\begin{aligned} 37x + 41y &= 70 \\ 41x + 37y &= 86 \end{aligned}$. **3**

4. Find vertices of triangle formed by 2x + 3y = 12 and x −y = 0 and y-axis graphically. Also find its area. **4**

5. Solve for x and y : $\dfrac{2}{x} + \dfrac{3}{y} = \dfrac{9}{xy}$ & $\dfrac{4}{x} + \dfrac{9}{y} = \dfrac{21}{xy}$, hence find k if 2x + 3ky = 7. **4**

6. Solve by cross multiplication : $\begin{aligned} x + y &= a - b \\ ax - by &= a^2 + b^2 \end{aligned}$. **4**

7. Find values of 'a' and 'b' for which the following system has infinite solution:

    $$2x + 3y = 7$$
    $$(a+b)x + (2a-b)y = 3(a+b+1).$$ **4**

8. The sum of a two digit number and the number obtained by reversing the order of its digits is 99. If the digits differ by 3, find the numbers. **4**

9. Points A and B are 90 km apart from each other on a highway. A car starts from A & another from B at the same time. If they go in the same direction they meet in 9 hrs. and if they go in opposite directions they meet in 9/7 hrs. Find their speeds. **4**