



Test / Exam Name: Maths - Linear Equations In Two Standard: 9th Variables

Subject: Mathematics

Student Name:

Section:

Roll No.:

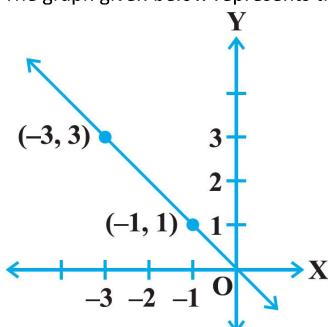
Questions: 26 Time: 01:45 hh:mm Marks: 50

Instructions

1. New section on new page
2. Honesty is the best policy.
3. Make sure to write in the point formation. You handwriting should be neat and clean
4. Rough work at the last page should be in proper manner too

SECTION-A

- Q1.** The graph of the linear equation $2x + 3y = 6$ cuts the y - axis at the point. 1 Mark
A (2, 0) B (0, 2) C (3, 0) D (0, 3)
- Q2.** Express y in terms of x in the equation $5x - 2y = 7$. 1 Mark
A $y = \frac{5x+7}{2}$ B $y = \frac{7x+5}{2}$
C $y = \frac{5x-7}{2}$ D $y = \frac{7-5x}{2}$
- Q3.** The graph of $x = 3$ is a line: 1 Mark
A Parallel to the x - axis at a distance of 3 units from the origin. B Parallel to the y - axis at a distance of 3 units from the origin.
C Makes an intercept 3 on the x - axis. D Makes an intercept 3 on the y - axis.
- Q4.** The graph of linear equation $x + 2y = 2$, cuts the y - axis at: 1 Mark
A (2, 0) B (0, 2) C (0, 1) D (1, 1)
- Q5.** If $x = 3$ and $y = -2$ satisfies $5x - y = k$, then the value of k is: 1 Mark
A 3 B -2 C 17 D 12
- Q6.** Write the correct answer in the following: 1 Mark
Any solution of the linear equation $2x + 0y + 9 = 0$ in two variables is of the form,
A $(-\frac{9}{2}, m)$ B $(n, -\frac{9}{2})$
C $(0, -\frac{9}{2})$ D $(-9, 0)$
- Q7.** The point of the form $(a, -a)$, $a \neq 0$ lies on: 1 Mark
A The x -axis B The y -axis C The line $y = x$ D The line $x + y = 0$
- Q8.** Express y in terms of x in the equation $5y - 3x - 10 = 0$. 1 Mark
A $y = \frac{3-10x}{5}$ B $y = \frac{3+10x}{5}$
C $y = \frac{3x-10}{5}$ D $y = \frac{3x+10}{5}$
- Q9.** The point on the graph of the linear equation $2x + 5y = 19$, whose ordinate is $1\frac{1}{2}$ times its abscissa is: 1 Mark
A (-2, -3) B (2, 3) C (4, 6) D None of these.
- Q10. Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: 1 Mark
Assertion: Any point on line $x = y$ is of the form (k, k) .
Reason: The graph of $x = 3$ is a line parallel to the y - axis at a distance of 2 units from the origin.
A Both Assertion and Reason are correct and Reason is the correct explanation for Assertion. B Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
C Assertion is true but the reason is false. D Both assertion and reason are false.
- Q11.** Write the following as an equation in two variables: 1 Mark
 $5x = \frac{7}{2}$
- Q12.** Write whether True or False and justify your answer. 1 Mark
The graph given below represents the linear equation $x + y = 0$.



Q13. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a , b and c in each case: **1 Mark**
 $-2x + 3y = 6$

Q14. Write whether True or False and justify your answer. **1 Mark**
 The coordinates of points in the table.

x	0	1	2	3	4
y	2	3	4	-5	6

represent some of the solutions of the equation $x - y + 2 = 0$.

Q15. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a , b and c in case: **1 Mark**
 $2x + 3y = 9.35$

SECTION-B

Q16. A line passes through the point $(-4, 6)$ and is parallel to x -axis. Find its equation. **2 Marks**

Q17. Check the following are solutions of the equation $2x - y = 6$ and which are not: **2 Marks**
 $(\sqrt{3}, 0)$

Q18. Check which of the following are solutions of the equation $x - 2y = 4$ and which are not: **2 Marks**
 $(1, 1)$

Q19. Express the following equation in the form $ax + by + c = 0$ and indicate the values of a , b , c in case. **2 Marks**
 $2x - \frac{y}{5} + 6 = 0$

Q20. Check the following are solutions of the equation $2x - y = 6$ and which are not: **2 Marks**
 $(\frac{1}{2}, -5)$

Q21. Write four solutions for each of the following equations: **3 Marks**
 $\pi x + y = 9$

Q22. If the temperature of a liquid can be measured in kelvin units as $x^\circ K$ or in fahrenheit units as $y^\circ F$, the relation between the two systems of measurement of temperature is given by the linear equation. **3 Marks**
 $y = \frac{9}{5}(x - 273) + 32$
 1. find the temperature of the liquid in fahrenheit, if the temperature of the liquid is $313K$.
 2. If the temperature is $158^\circ F$, then find the temperature in kelvin.

SECTION-C

Q23. Draw the graph of the equations given below. Also, find the coordinates of the points where the graph cuts the coordinate axes: **4 Marks**
 $6x - 3y = 12$

Q24. Read the case study given below and answer the questions that follow: **4 Marks**
 An entrepreneur plans to invest in two types of products, A and B. The investment in product A can be represented by the equation $5x + 3y = 30$ and the investment in product B by $x + 4y = 20$. If x is the amount invested in product A and y in product B, solve the equations to find out how much should be invested in each product to meet the budget constraints. Explain how these linear equations can be solved both algebraically and graphically to determine the optimal investment plan.
 1. What is the formula used to solve for x in terms of y from the equation $x + 4y = 20$?
 2. What does the intersection point of the two lines represent in the context of this problem?
 3. Solve the system of equations $5x + 3y = 30$ and $x + 4y = 20$ algebraically to find the values of x and y .

OR

3. Explain how the graphical method can be used to solve the system of equations given in this case study.

Q25. Draw the graph of the equation $2x + y = 6$. Shade the region bounded by the graph and the coordinate axes. Also, find the area of the shaded region. **5 Marks**

Q26. From the choices given below, choose the equation whose graphs are given in Fig. and Fig. **6 Marks**

For the first figure

For the second figure

- (i) $y = x$
- (ii) $x + y = 0$
- (iii) $y = 2x$
- (iv) $2 + 3y = 7x$

- $y = x + 2$
- $y = x - 2$
- $y = -x + 2$
- $y = -x + 2$

