Ravi Maths Tuition

Linear Equations in Two Variables

9th Standard

Mathematics

Multiple Choice Question 92 x 1 = 92

1) $\sqrt{2}y + \sqrt{3} = 0$ is

(a) a linear equation in one variable (b) not a linear equation in one variable

(c) a linear equation in two variables (d) none of these

2) The equation $x + \sqrt{2} = 0$ has

(a) no solution (b) infinitely many solutions (c) only one solution (d) only two solution

3) A linear equation in two variables has infinitely many solutions which can be represented on

(a) a number line (b) a circle (c) a square (d) the Cartesian plane

4) The general form of a linear equation in two variables is:

(a) ax+by+c=0, where a,b,c are real numbrs and a, b≠0 (b) ax+b=0, where a, b are real numbers and a≠b

(c) ax^2+bx+c=0, where a,b,c are real numbers and a, b≠0 (d) None of these

5) The condition that the equation ax+by+c=0 represents a linear equation in two variables is:

(a) a≠0, b=0 (b) b≠0, a=0 (c) a=0, b=0 (d) a≠0, b≠0

6) Write a, b, c for the equation 2x=5

(a) 2, 0, -5 (b) 0,2,-5 (c) 0,0,-5 (d) 2,0,5

7) Write a, b, c for the equation 3y+4=0

(a) 0,3,4 (b) 3,0,4 (c) 4,0,3 (d) 4,3,0

8) Write a, b, c for the equation x+y=0

(a) 1,1,0 (b) 1,-1,0 (c) -1,1,0 (d) 1,-1,1

9) Write a, b, c for the equation 2y-x=7

(a) -1,2,-7 (b) 1,2,7 (c) -1,-2,-7 (d) -1,-2,7

10) The equation x=7 in two variables can be written as:

(a) 1.x+1.y=7 (b) 1.x+1.y=3 (c) 0.x+1.y=7 (d) 0.x+0.y=7

11) The equation y=3 in two variables can be written as:

(a) 1.x+1.y=3 (b) 0.x+1.y=3 (c) 0.x+0.y=3 (d) 1.x+0.y=3

12) A linear equation in two variables has

(a) a unique solution (b) no solution (c) two solution (d) infinitely many solutions

13) The equation 2x=3 in two variables is of the form:

(a) 2.x+3.y=0 (b) 2.x+0.y=3 (c) $\frac{2}{3}.x + 0.y = 3$ (d) 1.x+$\frac{2}{3}$.y=1

14) Which of the following is a linear equation in one variable?

(a) 2x+y=0 (b) x^2=5x+3 (c) 5x+y^2+3 (d) x+5=6

15) which of the following is a linear equation?

(a) x^2+4x-3=-(x^2-1) (b) x^2=3x+4 (c) x+$\frac{1}{x}$=5 (d) (x-1)=1-x

16) The equation in 3x+4y=12 has

(a) a unique solution (b) no solution (c) two solution (d) infinitely may solution

17) The sum of the ages of Apala and Meenu is 48.Write a linear equation in two variables to represent the statement.

(a) x+y=48 (b) x-y-10=0 (c) 2x+y=48 (d) x+2y=48

18) Cost of book (x) exceeds twice the cost of pen (y) by Rs,10.This statement can be expressed as linear equation:

(a) x-2y-10=0 (b) 2x-y-10=0 (c) 2x+y-10=0 (d) x-2y+10=0

19) The salary of Dr.Harikisham is thrice the salary of Manish Goyal.Write a linear equation in two variables to represent the statement.

(a) x=3 (b) x+3y=0 (c) x=3y+3 (d) x=y+3

20) The opposite angles of a parallelogram are equal.Write a linear equation in two variables to represent the statement

(a) x+y=0 (b) x=y (c) x=2y (d) x+y+1=0

21) The numerator of a fraction is 1 less than the denominator.Write a linear equation in two variables to represent the statement.

(a) x=y-1 (b) x+y=0 (c) x=y (d) x+y+1=0

22) If x represents the present age of father and y represents the present age of the son, then the statement 'present of father is 5 more than 6 times the age of son' in terms of mathematical equation is:

(a) 6x+y=5 (b) x=y+30 (c) x+6y=5 (d) x-6y=5

23) The force applied on a boy is directly proportional to the acceleration produced in the body.Express this in the form of a linear equation in two variables.

(a) y=x (b) x=y+30 (c) x+66=5 (d) x-6y=5

24) The line y=x passes through

(a) (0,0) (b) (0,1) (c) (1,0) (d) 91,-1)

25) Equation of a line passing through origin is:

(a) x+y=1 (b) x=2y-4 (c) x+y=0 (d) y=x-1

26) A point on the line x+y=0 is

(a) (1,1) (b) (1,-1) (c) (0,1) (d) (1,0)

27) The line y=mx passes through

(a) origin (b) (1,1) (c) (m, 1) (d) (-1,_1)

28) The line y=mx+c

(a) passes through origin (b) does not pass through origin (c) is parallel to x-axis (d) is parallel to y-axis

29) The pair satisfying 2x+y=6 is

(a) (1,2) (b) (2,1) (c) (2,2) (d) (1,1)

30) Which of the following is a solution of the equation x-y=-1?

(a) (0,1) (b) (1, 0) (c) (1,1) (d) (2, 1)

31) Which of the following is the solution of y-4=0?

(a) x=0, y=4 (b) x=4, y=0 (c) x=-4, y=-4 (d) x=0, y=0

32) The linear equation 5x-3y=2 has a solution

(a) (1,2) (b) (1,1) (c) (2,1) (d) (1,-1)

33) x=2 and y=-1 in the solution of the equation:

(a) x-y=3 (b) 2x+y=-3 (c) x-2y=0 (d) x+y=3

34) Which of the following ordered pairs is a solution of the equation x-2y=6?

(a) (2, 4) (b) (0,3) (c) (-4, 1) (d) (4, -1)

35) Solution of linear equation 2x+0y+9=0 is:

(a) $\left(-\frac{9}{2}, m\right)$ (b) $\left(n, -\frac{9}{2}\right)$ (c) $\left(0, -\frac{9}{2},\right)$ (d) $\left(-\frac{9}{2}, 0\right)$

36) If (3, 2) is the solution of the equation 3x-ky=5, then equals:

(a) 2 (b) 4 (c) 3 (d) $\frac{1}{2}$

37) If the point (4, 1) lies on the line x-ky=2, then the value of k is

(a) 1 (b) -1 (c) -2 (d) 2

38) Find the value of k if (4, 1) is a solution of 3x+2y=k

(a) 14 (b) 12 (c) 10 (d) 16

39) If the unit's and ten's digits of a two digit number are y and x, then the number is

(a) 10x+y (b) 10y+x (c) x+y (d) xy

40) The age of a boy is one-third the age of his mother.If the present age of mother is x years, then the age of boy after 12 years will be

(a) $\frac{x}{3} + 12$ (b) $\frac{x+12}{3}$ (c) $x + 4$ (d) $\frac{x}{12} - 12$

41) If x=1, then the value of y from the equation $\frac{4}{x} + \frac{3}{y} = 5$ is

(a) 1 (b) $\frac{1}{3}$ (c) 3 (d) -3

42) If y=2x-3 and y=5, then the value of x is

(a) 1 (b) 2 (c) 3 (d) 4

43) If $\frac{3}{x} + 5y = 7$ and y=1, then the value of x is

(a) 3 (b) $\frac{1}{3}$ (c) -3 (d) $-\frac{1}{3}$

44) If $\frac{4}{x} + 5y = 7 \; and \; x = -\frac{4}{3}$, then the value of y is

(a) $\frac{37}{15}$ (b) 2 (c) $\frac{1}{2}$ (d) $\frac{1}{3}$

45) The equation of x-axis is

(a) x=0 (b) y=0 (c) x=1 (d) y=1

46) The equation of y-axis is

(a) x=0 (b) y=0 (c) x=1 (d) y=1

47) How many lines may pass through O?

(a) 1 (b) 2 (c) 4 (d) infinitely many

48) How many lines may pass through two points?

(a) 1 (b) 2 (c) 3 (d) Infinitely many

49) The maximum number of points that lie on the graph of a linear equation in two variables is:

(a) two (b) infinite (c) three (d) None of these

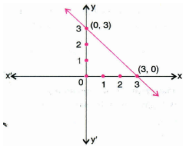
50) How many linear equations in x and y can be satisfied by x = 1 and y = 2?

(a) only one (b) two (c) infinitely (d) three

51) The linear equation 2x + 5y = 7 has:

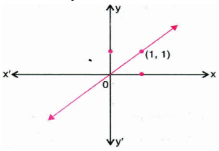
(a) a unique solution (b) two solution (c) three solution (d) infinitely many solutions

52) The equation whose graph is



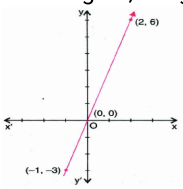
(a) x+y=6 (b) x+y=3 (c) x+y+3=0 (d) x+y=0

53) The equation whose graph is



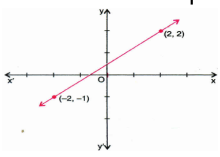
(a) y=x (b) x+y=0 (c) x+y=1 (d) y-x=1

54) In the figure, the graph of the equation is drawn. Choose the correct equation for which the graph has been drawn:



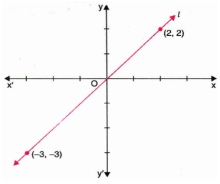
(a) y=x (b) y=x (c) y=2x (d) y=3x

55) To which linear equation does the graph represent?



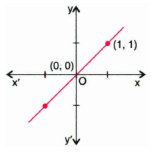
(a) 3x-7y=10 (b) y-2x=3 (c) 8y-6x=4 (d) $5x+\frac{35}{2}y+25$

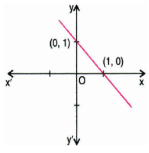
56) In the figure, l is the graph of the equation:

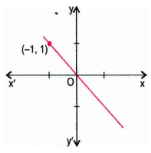


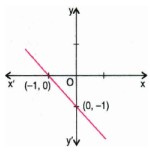
(a) y=x (b) x+y=0 (c) x=2y (d) y=2x

57) Which one of the following graphs represents the graph of x + y = 0?

(a) 

(b) 

(c) 

(d) 

58) The graph y = mx is a:

(a) straight line parallel to x-axis (b) straight line parallel to y-axis (c) line that passes through the origin

(d) line that coincides with the x-axis

59) Any point on the line y = 3x is of the form:

(a) (a, 3a) (b) (3a, a) (c) $\left(a, \frac{a}{3}\right)$ (d) $\left(\frac{a}{3}, -a\right)$

60) The graph of the equation ax + by + c = 0 will pass through the origin if:

(a) a=0 (b) b=0 (c) a=b (d) c=0

61) The equation of the line, whose graph passes through the origin is:

(a) 2x+3y=1 (b) 2x+3y=0 (c) 2x+3y=6 (d) None of these

62) The graph of the linear equation y-x=0 passes through the point:

(a) $\left(0, \frac{3}{2}\right)$ (b) $\left(\frac{3}{2}, -\frac{3}{2}\right)$ (c) $\left(-\frac{1}{2}, \frac{1}{2}\right)$ (d) $\left(\frac{1}{2}, \frac{1}{2}\right)$

63) Any point where graph of linear equation in two variables cuts x-axis is of the form:

(a) (x, y) (b) (0,y) (c) (x, 0) (d) (y,x)

64) Any point on the line y=x is of the form:

(a) (a,a) (b) (0,a) (c) (a, 0) (d) (a, -a)

65) Any point of the form (q, -q) always lie on the graph of the equation:

(a) x=-a (b) y=a (c) y=x (d) x+y=0

66) Straight line passing through the points (-1, 1), (0,0) and (1, -1) has equation:

(a) y=x (b) x+y=0 (c) y=2x (d) 2+3y=7x

67) The coordinates of the point where lines ax=by and ay=bx intersect are:

(a) (1,1) (b) (2,-2) (c) (-3, 3) (d) (0,0)

68) The point of intersection of the lines represented by the equations 3x=2y+1 and 2x=3y-1 is:

(a) (2,3) (b) (3,2) (c) (1,1) (d) (0,0)

69) The graph of the linear equation, x-2y=0, will pass through

(a) III and IV quadrants (b) I quadrant and III quadrant (c) II quadrant and IV quadrant

(d) I quadrant and II quadrant

70) The point of the from $\left(\frac{p}{2}, p\right)$ always lies on the graph of the equation:

(a) 2x=y (b) x=2y (c) x=y+2 (d) x+2=y

71) Where does the line -2x+y-7=0 intersect y-axis?

(a) at (0,7) (b) at(7,0) (c) at(7,7) (d) at(-7,-7)

72) Where does the line 2x+3y=6 cut x-axis?

(a) at(3,0) (b) at (0,3) (c) at (0,0) (d) at(3,3)

73) Graph of linear equation 2x+by+c=0, a≠0, b≠0 cuts x-axis and y-axis respectively at the points:

(a) $\left(-\frac{c}{a}, 0\right)\left(0, -\frac{c}{b}\right)$ (b) $\left(0, -\frac{c}{b}\right), \left(-\frac{c}{a}, 0\right)$ (c) (-c, 0),(0, -c) (d) (x,0), (y,0)

74) Graph of linear equation 2x+3y=6 will intersect y-axis at:

(a) (2,0) (b) (0,3) (c) (3, 0) (d) (0, 2)

75) The graph of the equation 2x+3y=6 cuts the x-axis at the point

(a) (0,3) (b) (3, 0) (c) (2, 0) (d) (0,2)

76) Solve the equation 3x=20-x

(a) 1 (b) 2 (c) 3 (d) 4

77) Express y in terms of x in the equation 5y-3x-10=0

(a) $y = \frac{3x+10}{5}$ (b) 4 (c) 3 (d) 2

78) Solve the equation $\frac{y}{4} + 1 = \frac{y}{2}$

(a) 1 (b) 4 (c) 3 (d) 2

79) Solution to the equation $2y + 6 = \frac{2}{3}(3y + 9) + x$:

(a) lie on the x-axis (b) in the 3rd quadrant (c) in the 4th quadrant (d) on the y-axis

80) The value of y at x=-1 in the equation 5y=2 is:

(a) $\frac{5}{2}$ (b) $\frac{2}{5}$ (c) 10 (d) 0

81) A solution of the linear equation $2\sqrt{2}x - 3y + 4 = 0$ corresponding to y=2 is:

(a) 2-2$\sqrt{2}$ (b) $2\sqrt{2} - 2$ (c) $\frac{1}{\sqrt{2}}$ (d) $-\sqrt{2}$

82) If x=3-3y and y=-2 is a solution of the equation 4px-3y=12, then the value of p is:

(a) 0 (b) $\frac{1}{2}$ (c) 2 (d) 3

83) The graph of x=a is a straight line parallel to

(a) x-axis (b) y-axis (c) line x=y (d) line x+y=0

84) The graph of y=a is a straight line parallel to

(a) x-axis (b) y-axis (c) line y=x (d) line x+y=0

85) The graph of the line y=m is parallel to:

(a) x-axis (b) y-axis (c) both axes (d) passes through origin

86) Which of the following is the equation of a line parallel to y-axis?

(a) y=0 (b) x+y=z (c) y=x (d) x=a

87) The equation of a line parallel to y-axis is:

(a) x=1 (b) x+y=0 (c) y=0 (d) y=1

88) The graph of 0.x+3y=6 is parallel to:

(a) neither x-axis nor y-axis

89) x=4 is a line:

(a) parallel to y=-4 (b) parallel to x-axis (c) passing through origin (d) parallel to x=-4

90) Equation of line which is at 5 units distance above the x-axis is:

(a) x=5 (b) x+5=y (c) y=5 (d) x-y=0

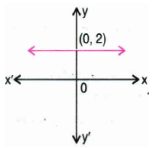
91) The graph of y=6 is a line:

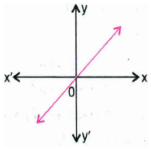
(a) parallel to x-axis at a distance 6 units from the origin

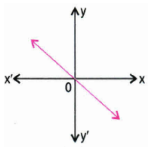
(b) parallel to y-axis at a distance 6 units from the origin (c) passing through the point (6,0)

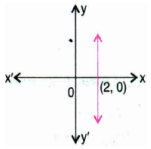
(d) passing through the origin

92) The graph of y=2 is

(a) 

(b) 

(c) 

(d) 

1 Marks 67 x 1 = 67

93) Write each of the following linear equations in the form ax + by + c = 0 and indicate the values of a, band c in each case.

(i) 2x + 5y = 8 (ii) x - 5 =$\sqrt{3}y$ (iii) x = 2y

94) Write each of the following equations as an equation in two variables.

(i) 2y =3 (ii) 3x =-5

95) The cost of a ball pen is Rs 5 less than half of the cost of a fountain pen. Write this statement as a linear equation in two variables.

96) A lending library has a fixed charge for the first three days and an additional charge for each day thereafter Roshni paid Rs.35 for a book kept for seven days. Write a linear equation which satisfies this data.

97) Find any four solutions of the equation 4x +3y = 12.

98) When 3 times the larger of two numbers is divided by the smaller, then the quotient and remainder are 2 and 7, respectively. Form a linear equation in two variables for above and give its two solutions.

99) Check whether x = 2 and y = 1 is a solution of the following equations or not.
(i) 2x + 5y = 9
(ii) x + y + 4 = 0
(iii) $\frac{5}{2}x + 3y = 14$

100) Find the value of k for each of the following equations, if x = 1and y = 1 is its solution.
(i) 9kx + 12ky = 63
(ii) 5x + 2ky = 3k

101) The parking charges of a car in a parking lot is Rs 30 for the first two hours and Rs10 per hour for subsequent hours. Taking total parking time to be x h and total charges as Rs y, write a linear equation in two variables to express the above statement.

102) If the point (2, 3) lies on the graph of the equation 2x + ay = 10, find the value of a.

103) Find a point on X-axis from where graph of linear equation 2x = 1- 5y will pass.

104) Give the equation of three lines passing through (4, -5).How many more such lines are there and why?

105) What is the equation of X-axis?

106) Write an equation of a line which passes through the origin.

107) If $\pi x + 3y = 25$ and y=1, then find x.

108) At what point, the graph of linear equation 2x + 3y = 6 cuts the Y-axis?

109) If the graph of 2x + ky = 10k intersects X-axis at (2, 0). find k.

110) Is the point (0, 3) 3x + 4y = 12?

111) If a linear equation passes through the points (3, - 3) and (6, - 6), then write the equation of the line.

112) Write a linear equation, where the point of the form (a. a)lies.

113) How many linear equations in x and y can be satisfied by x=1 and y=2?

114) What is the form of any solution of linear equation 2x + 0· y = 9?

115) In which quadrant, the positive solutions of the equation ax + by + c = 0 always lie?

116) Write a linear equation having solutions of the type (-2, - 2), (0, 0)and (2, 2).

117) Write two solutions of the linear equation x + 2y = 1.

118) "The graph of the equation y = mx + c does not pass through the origin." Justify the statement.

119) Write the equation of x = 5 in the standard form of linear equation in two variables.

120) Solve the equation 2y - 1 = y + 1 and represents it graphically on the coordinate plane.

121) Find the value of k, for which the point (1, 2) lies on the graph of the linear equation x - 2y + k = o.

122) If the graph of 2x + ky = 12 passes through the point (0,8), then find k.

123) How the equation y = 7 can be written in two variables form?

124) What is the form of a point on the line y = x?

125) In which quadrant, the negative solutions of the equation ax + by + c = 0 always lie?

126) If X= α-1 and y = 2α- 1 is a solution of the equation 3x + 2y + 7 = 0, then find the value of α.

127) "The cost of a hen is 50 times the cost of its egg." Write the linear equation for the above statement, if x represents the cost of a hen and y represents cost of an egg of it.

128) What does the linear equation 3x- 2 = a represent in a cartesian plane?

129) Is ox+oy+c=0, a linear equation?

130) An equation of the form ax+by+c=0 will be a linear equation in two variables, when a≠0, b≠0. Is it True or False?

131) In a one day cricket match, Raina and Dhoni scored 198 runs. Express this as a linear equation in two carables.

132) Total number of legs in a herd of goats and hens is 40. Represent this in the form of linear equation of two variable.

133) If x represent the present age of father and y represent the present age of the son, then the statement "present age of father is 5 more than 6 times the age of son" in mathematical term equation...

134) Does the following equation x=5y represent a straight line passing through the point (0,0)?

135) Is x=4, y=0, the solution of y-4=0?

136) The equation x=7 in two variables can be written as _____

137) If the linear equation has solutions (-5,0),(0,0),(5,-5) then the equation is _____

138) Find the point where equation 3x+2y=12 intersects y-axis

139) If $\sqrt{3}x = \sqrt{2}x + 1$, then x is equal to _____

140) If the point (2,3) lies on the 4y=ax+5, then a=_____

141) The value of y at x=-1 in the equation 5y=2, is _____

142) If (0,2) is a solution of the linear equation 2x+3y=k, then find the value of k.

143) The equation of a line on which the point (6,2) lies is _____

144) What is the solution of the equation 3x-y=4?

145) x=3, y=2 is a solution of the linear equation _____

146) The co-ordinates of the points where lines ax=by and ay=bx intersect, are _____

147) x=2 and y=-1 is the solution of the equation _____

148) If c=1, y=-1 is a solution of equation px-2y=10, the value of p is _____

149) Any solution of linear equation 2x+0y+9=0 in two variable is _____

150) What is the equation of a line parallel to x-axis?

151) The equation of a line parallel to y-axis is

152) x=4 is a line parallel to line _____

153) The graph of the equation x + a = 0 is a line parallel to y-axis and to the left of the y-axis if _____

154) The graph of the linear equation 4x - 3y = 12 cuts y-axis at _____

155) The graph of the linear equation 3x + 5y = 15 cuts the x-axis at the point ___

156) Draw the graph representing the equation of x + y = 0.

157) (a) Is (3, 2) a solution of 2x + 3y = 12?
(b) Is (1, 4) a solution of 2x + 3y = 12?
(c) Is (-5, $\frac{22}{3}$)a solution of 2x + 3y = 12?
(d) Is (2, $\frac{8}{3}$) a solution of 2x + 3y = 12?

158) Find the value of k such that x = 2 and y = 1 is a solution of the linear equation 2x - ky + 7 = 8

159) Write a linear equation such that the point (1, 2) lies on its graph.

Assertion and reason 11 x 1 = 11

160) **Assertion :** A linear equation 3x + 5y = 2 has a unique solution.
Reason : A linear equation in two variables has infinitely many solutions.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

161) **Assertion :** If x = 2, y = 1 is a solution of the equation 2x + 3y = k, then the value of k is 7.
Reason : The solution of the line will satisfy the equation of the line.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

162) **Assertion :** If x = 2k – 1 and y = k is a solution of the equation 3x – 5y – 7 = 0, then the value of k is 10
Reason : A linear equation in two variables has infinitely many solutions.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

163) **Assertion :** There are infinite number of lines which passes through (3, 2).
Reason : A linear equation in two variables has infinitely many solutions.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

164) **Assertion:** x = 3 and y = 2 is a solution of the linear equation 2x + 3y = 12.
Reason: x = 4 and y = 2 is a solution of the linear equation x + 3y = 10.

165) **Assertion :** The point (3, 0) lies on the graph of the linear equation 4x + 3y = 12.
Reason : (3, 0) satisfies the equation 4x + 3y = 12.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

166) **Assertion :** The graph of the linear equation 2x – y = 1 passes through the point (2, 3).
Reason : Every point lying on graph is not a solution of 2x – y = 1.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

167) **Assertion:** x = 2 is a line parallel to the y-axis.
Reason: The equation of a line parallel to the y-axis is x = a.
Codes: (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

168) **Assertion:** x + y = 3 is the equation of a line passing through the origin.
Reason: y = 2x is the equation of a line passing through the origin.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

169) **Assertion:** y = 3x represents a line passing through the origin.
Reason: Any line parallel to the x-axis is y = a.
Codes:
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

170) **Assertion :** The point (2, 2) is the solution of x + y = 4.
Reason : Every point which satisfy the linear equation is a solution of the equation.

2 Marks 87 x 2 = 174

171) Find four different solutions of the equation x + 2y = 6

172) Given the point (1, 2), can you give the equation of a line on which it lies? How many such equations are there?

173) Draw the graph of x + y = 7.

174) Solve the equation 2x + 1 = x - 3, and represent the solution(s) on
(i) the number line
(ii) the Cartesian plane

175) Write each of the following as an equation in two variables:
(i) x = -5
(ii) Y = 2
(iii) 2x = 3
(iv) 5y = 2

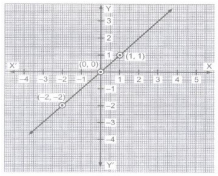
176) Write each of the following equations in the form ax + by + c = 0 and also write the values of a, b and c in each case:
(i) 2x + 3y = 3.47
(ii) x - 9 = $\sqrt{3}$y
(iii) 4 = 5x - 3y
(iv) y = 2x

177) Find two solutions for each of the following equations:
(i) 4x + 3y = 12
(ii) 2x + 5y = 0
(iii) 3y + 4 = 0

178) Force applied on a body is directly proportional to the acceleration produced in the body. Write an equation to express this situation and plot the graph of the equation.

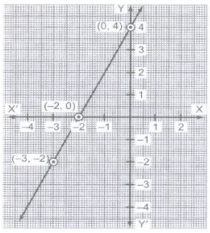
179) For each of the graph given in the following figure select the equation whose graph it is from the choices given below:

Fig. (a)



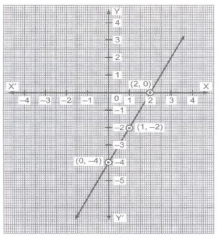
(i) x + y = 0
(ii) x - y = 0
(iii) y = 2x + 4
(iv) y = x - 4

Fig. (b)



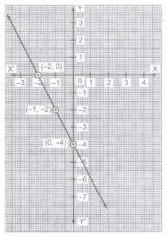
(i) x + y = 0
(ii) x - y = 0
(iii) y = 2x + 4
(iv) y = x - 4

Fig. (c)



(i) x + y = 0
(ii) x - y = 0
(iii) y = 2x + 1
(iv) y = 2x - 4

Fig. (d)



(i) x + y = 0
(ii) x - y = 0
(iii) 2x + y = -4
(iv) 2x + y = 4

180) Write the following as an equation in two variables:
x=-5

181) Write the following as an equation in two variables:
y=2

182) Write the following as an equation in two variables:
2x=3

183) Write the following as an equation in two variables:
5y=2

184) Write the following equations in the form ax+by+c=0 and indicate the values of a, b and c
2x+3y=4.37

185) Write the following equations in the form ax+by+c=0 and indicate the values of a, b and c
$x - 4 = \sqrt{3}y$

186) Write the following equations in the form ax+by+c=0 and indicate the values of a, b and c
4=5x-3y

187) Write the following equations in the form ax+by+c=0 and indicate the values of a, b and c
2x=y

188) Check whether (3, 1), (1, 3) and (0, 8) are the solutions of the equation 3x-y=8

189) Express y in terms of x, it being given that 3x+y-9=0.Check whether the points (3,0) and (2, 2) lie on the equation

190) Write the equation $y\sqrt{3} = 8x + \sqrt{3}$ in the form of ax+by+c=0, Check whether (0,-1) and $(\sqrt{3}, 9)$ are solution of this equation

191) Write the following equation in the form ax+by+c=0 and find values of a, b and c: 4=3x-5y. Check whether (1, -1) and (3, 1) are solutions of this equation or not.

192) Find two solutions for each of the following equations:
(i)2x-3y=12
(ii)2x-5y=0
(iii)3y-4=0

193) Find three different solutions for the equation 3x-4y=-12

194) Find three different solutions for the equation 6x-8y+32=0

195) Write six solutions for the equation 2x+y=7

196) Find the value of a so that the following equation may have x=1, y=1 as a solution 3x+ay=6

197) Give the equation of two lines passing through (3,4). How many more such lines are there and why?

198) Draw the graph of the linear equation 3x - y = 4.From your graph, find the values of hand k if the graph passes through the points (h, -4) and (3, k).

199) Draw the graph of the linear equation y = m.x + c for m = 2 and c = 1. Read from the graph the value of y when x = $\frac{3}{2}$

200) Express x in terms of y, it is being given that 7x - 3y = 15: Check if the line represented by the equation intersects the y-axis at y = -5.

201) Draw a graph of the line x - 2y = 3. From the graph, find the coordinates of the point when
(i) x =-5
(ii) y = 0.

202) Draw the graph of x = 3y - 4.Find the
(i) value of y when x = -1
(ii) value of x when y = 5.

203) Draw the graph of the linear equation 3x + 2y = 12.Also find the points where this graph cuts x-axis and y-axis.

204) Draw the graph of linear equation 5y = 3x + 18 on Cartesian plane. From the graph check whether (-2,4) is the solution of linear equation or not.

205) Given the point (1, 2), find the equation of a line on which it lies. How many such equations are there?Write the equation in the form ax + by + c = 0.

206) Find the value of 'm' if x = 2, y = 1 is a solution of the equation 2x + 3y = m and represent it graphically

207) Sketch the graph of the equation 3x + 5y = 15.Find the area of the figure formed by this line and the two axes.

208) Graphically show the position of the equations x = 5 and y = -3. Name the type of quadrilateral formed with these lines and the two axes. Write the coordinates of its vertices.

209) The cost of a note book is thrice the cost of a pen.Write a linear equation in two variables to represent this statement.Express it graphically.

210) Two friends Sita and Gita, together contributedRs.200 towards Prime Minister's Relief Fund.Write a linear equation which satisfies this data.Draw the graph

211) The taxi fare in a city is Rs.8.00 for first kilometer and for the subsequent distance it is Rs 5.00 per km. Write a linear equation to represent this information in two variables taking distance covered as 'x' km and total fare as y (in Rs.) and draw its graph. Find the distance traveled by a person if he spent Rs.63.00.

212) The taxi fare in a city is as follows: for the first kilometer, the fare is Rs.10 and for the subsequent distance it is Rs.6 per km. Taking the distance covered as x km and total fare as Rs.y, write a linear equation for this information, and draw its graph.

213) The parking charges of a car on New Delhi Railway Station for first two hours is Rs.50 and Rs.10 for subsequent hours.Write down an equation and draw the graph of this data. Read the charges from the graph:
(i) for one hour
(ii) for three hours
(iii) for six hours.

214) You know that the force applied on a body is directly proportional to the acceleration produced in the body.Write an equation to express this situation and plot the graph of the equation.The following linear equation converts Fahrenheit temperature to Celcius
$F = \left(\frac{9}{5}\right) C + 32$
(i) If the temperature is 40°C, what is the temperature in Fahrenheit?
(ii) If the temperature is 95°F, what is the temperature in Celcius?
(iii) Is there a temperature which is numerically of same value in Fahrenheit and Celcius? If yes, find the temperature.

215) Solve for x: $3x + 11 + \frac{x}{2} = -\frac{7}{2} + 18$.What will be the graph of this equation?

216) Solve 4x - 7 = 9. Represent the solution
(i) on the number line
(ii) in the Cartesian plane.

217) Solve the equation 3(x + 2) = 2(2x - 1) and represent the solution:
(i) on the number line
(ii) in the Cartesian plane.

218) Give the geometric interpretation of 7x + 6 = 2x - 4 as an equation:
(i) in one variable
(ii) in two variables

219) Give the geometrical representation of the equation 3x + 15 = 0 as an equation:
(i) in one variable
(ii) in two variables.

220) Give the geometrical interpretation of 2x + 4 = 0 as an equation:
(i) in one variable
(ii) in two variables.

221) 'Five years ago, Nuri was thrice as old as Sonu. Express this information in linear equation.

222) Write a linear equation for the statement, "Twice a number decreased by 7 gives 69". Also, find one solution. How many solutions does the equation have?

223) If we add 1 to the numerator and subtract 1 from the denominator. a fraction reduces to 1. Form a linear equation for this information.

224) The cost of a toy telephone is the same as cost of 4 balls. Express the statement as a linear equation in two variables. Also, find the cost of getting 2 toy telephones packed, if cost of 1 ball is Rs 5 and there is a fixed cost of 2 for packing a toy telephone.

225) Find whether ($\sqrt{3}$,0) is a solution of $3\sqrt{3}$ x - 3y = 9 or not.

226) A linear equation in one variable given by 3x + 7 = 0 has how many solution(s)?

227) Check which of the following is (are) the solution of the equation 3y - 2x = 1.
(i) (4,3) (ii) $(2\sqrt{2}, 3\sqrt{2})$

228) Find the value of a for each of the following, if x = 1 and y = 1 is its solution.
(i) x - y = a
(ii) 3x + ay = 6

229) The monthly hostel charges for Apeksha comprises Rs 1000 per month as fixed boarding charges and remaining charges at the rate of Rs 50 per day (for the number, for which the food has been availed by Apeksha).
(i) Form a linear equation in two variables to represent the above situation.
(ii) Find two solutions possible for equation formed.
(iii) What are the monthly charges to be paid by Apeksha who availed meals for 21 days in a given month?

230) Draw the graphs of the linear equations y = x and y = 2x on the same cartesian plane. What is your observations in these graphs?

231) The price of 2 pens and 5 pencils is Rs 60. Draw the graph after forming a linear equation.

232) The path of a train A is given by the equation 2x - 3y = 17 and path of another train B is given by the linear equation 4x - 6y = 18. Represent the above situations graphically and write your observation.

233) Through which quadrant(s), the graph of the linear equation x - 2y = 0 will pass?

234) How many solutions of the equation 2x + 1 = x - 3 are there on the
(i) number line?
(ii) cartesian plane?

235) What is the distance between the graph of the equations x = - 4and x = - 17

236) The sum of a two-digit number and the number obtained by reversing the order of, its digits is 121. If unit's and ten's digits of the number are x and y respectively, then write the linear equation representing the above statement.

237) Express y in terms of x, given that 2x - 5y = 7. Check whether the point (-3, - 2)is on the given line.

238) Draw the graph of linear equations y = x and y = - x on the same cartesian plane. What do you observe?

239) Write linear equation such that each point on its graph has ordinate 3 times its abscissa.

240) The angles of a triangle are $5(y - 1)^o$, $3(2y - 5)^o$ and $9y^o$. Find y and assign the name of the triangle.

241) Check whether x = 5 and y = 2 is a solution of following equations or not.
(i) 5x- + 2y = 7 (ii) 5x + y = 7

242) Find the value of k, if (1, - 1) is a solution of the equation 3x - ky = 8. Also, find the coordinates of another point lying on its graph.

243) Express y in terms of x, it is being given that 2x + 3y = 7. Check, if the line represented by the given equation intersects the X -axis at x = -7 / 2.

244) Express the linear equation 5 = 2y in the form ax + by + c = a and indicate the values of a, b and c. Also, give the geometrical representation of above equation in two variables.

245) Find three solutions of linear equation 7x-5y=35 in two variables.

246) Give equations of two lines on the same plane which are intersecting at point(2,3).

247) After 5 years, the age of father will be two times the age of his son. Write a linear equation in two variables to represent this statement.

248) A part of monthly expense of a family on milk is fixed which is Rs 700 and the remaining varies with the quantity of milk taken extra at the rate of Rs 25 per litre. taking the quantity of milk required extra as x litre and total expenditure on milk is rs y. Write a linear equation representing the above information.

249) Find the value of k for which the point (-1,3) lies on the graph of the equation 2x-y+k=0

250) If x=2 and y=1 is the solution of the linear equation 2x+3y+k=0, find the value of k

251) Express y in terms of x from the equation 3x+2y=8 and check whether the point (4,-2) lies on the line

252) Express y in terms of x in equation 2x-3y=12. Find the points where the line represented by this equation cuts x-axis and y-axis.

253) The point (3,4) lies on the graph of the equation 3y=ax+7. Find the value of 'a'.

254) Find the co-ordinate of points where the graph of the equation 4x+3y=12 intersects x-axis and y-axis

255) Find the point at which the equation 3x-2y=6 meets the x-axis.

256) If the point (2k-3, k+2) lies on the graph of the equation 2x+3y+15=0, find value of k.

257) Find the value of K so that x=-1 and y=-1 is a solution of the linear equation 9kx+12ky=63.

3 Marks 82 x 3 = 246

258) Which one of the following options is true and why?
y = 3x + 5 hs
(i) a unique solution
(ii) only two solutions
(iii) infinitely many solutions

259) Check which of the following are solutions of equation x-2y = 4 and which are not:
(0,2)

260) Check which of the following are solutions of equation x-2y = 4 and which are not:
(2,0)

261) Check which of the following are solutions of equation x - 2y = 4 and which are not:
(4,0)

262) Check which of the following are solutions of equation x-2y = 4 and which are not:
$(\sqrt{2}, 4\sqrt{2})$

263) Check which of the following are solutions of equation x-2y = 4 and which are not:
(1, 1)

264) Find the value of k, if x = 2, y = 1 is a solution of the equation 2x + 3y = k.

265) Give the equations of two lines passing through (2, 14). How many more such lines are there, and why?

266) If the point (3, 4) lies on the graph of the equation 3y = ax + 7, find the value of a.

267) The taxi fare in a city is as follows: For the first kilometre, the fare is Rs.8 and for the subsequent distance it is Rs.5 per km.Taking the distance covered as x km and total fare as Rs.y, write a linear equation for this information, and draw its graph.

268) Yamini and Fatima, two students of Class IX of a school, together contributed Rs.100 towards the Prime Minister's Relief Fund to help the earthquake victims.Write a linear equation which satisfies this data. (You may take their contributions as Rs.x and Rs.y) Draw the graph of the same.

269) Give the geometric representations of y = 3 as an equation
(i) in one variable
(ii) in two variables.

270) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
$2x + 3y = 9.3\overline{5}$

271) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
$x - \frac{y}{5} - 10 = 0$

272) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
-2x+3y=6

273) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
x=3y

274) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
2x-5y

275) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
3x+2=0

276) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
y-2=0

277) Express the following linear equation in the form ax+by+c=0 and indicate the values of a, b and c in each case:
5=2x

278) Write four solutions for each of the following equations:
2x+y=7

279) Write four solutions for each of the following equations:
$\pi x + y = 9$

280) Write four solutions for each of the following equations:
x=4y

281) Draw the graph of the following linear equations in two variables:
x+y=4

282) Draw the graph of the following linear equations in two variables:
x-y=2

283) Draw the graph of the following linear equations in two variables:
y=3x

284) Draw the graph of the following linear equations in two variables:
3=2x+y

285) From the choices given below, choose the equation whose graphs are given in Fig.(1) and Fig.(2)

For Fig.1	**For Fig.2**
(i)y=x	(i)y=x+2
(ii)x+y=0	(ii)y=x-2
(iii)y=2x	(iii)y=-x+2
(iv)x+3y=7x	(iv)x+2y=6

286) Give the equations of any three lines passing through the point (2, -3).

287) Write 3 different solutions of 2x +y =

288) Consider the point A(-2, 3)
(I) How many lines can be drawn passing through A?
(ii) Give equation of any two lines passing through A.
(iii) Without actually drawing the graph, find a point, other than A, on each of these two lines.

289) Give the equations of two lines passing through (-3, 4). How many more such lines are possible?

290) The co-ordinates of points given in the following table represent some of the solutions of the equation. y - 5x = 2.

X	1	-	-	-2	2	-
Y	-	17	-3	-	-	3

Find the missing values.Also find the coordinates of the points where the line cuts x-axis and y-axis

291) Find the value of k if x=2, y=1 is a solution of the equations 2x+3y=k and 3x+y=k

292) (i)Express y in terms x in the equation
2x-3y=12
(ii)Find the co-ordinates of the points where the line cuts the x-axis

293) Express y in terms of x in the equation 5x-4y+20=0.Draw the graph and find the points where the lines represented by this equation cuts x-axis and y-axis

294) Draw the graphs of y=x and y=-x in the same axes.Also, find the co-ordinates of the points where the two lines intersect

295) Draw the graphs of 3x+y=6.At what points, does the graph intersect axes?

296) Draw the graph of the equations 3x+4y=7 and 3x-2y=1 and find the point of intersection of lines representing the equations.

297) The Auto fare in a city is as follows:
For the first kilometer the fare is Rs.5 and for the successive distance it is Rs.1 per kilometer.Taking a distance covered as x kilometer and total fare as Rs.y, write a linear equation for the above said data and draw its graph

298) Write $\sqrt{7}y = 2x$as a linear equation of the form ax+by+c=0.Also write the values corresponding to a, b, c.Does the graph of this linear equation pass through origin?Give your answer in yes or no.

299) The cost a notebook in a book-shop is Rs.15.Form a linear equation with x-representing the number of notebooks and y-representing the total cost (in Rs) and draw its graph.From the graph, find the total cost if 5 notebooks are purchased

300) Water is following into a water tank at the rate of 10cm^3 /sec.If the volume of water collected in t seconds is V cm^3, write a linear equation to represent the above statement.Draw a graph of the linear equation.

301) The cost a toy telephone is the same as cost of 4bals. Express this statement as a linear equation in two variables. Also, find the cost of getting 2 toy telephone packed, if cost of 1 ball is Rs.5 and there is a fixed cost of Rs.2 for packing a toy telephone.

302) Let y vary directly as x.If y=12 when x=4, then write a linear equation.Draw the graph of this linear equation.Check if the point (5, 15) lies on the graph.

303) Determine the co-ordinates of a point on the graph of 5x-y=12 whose
(a)ordinate is twice that of the abscissa
(b)abscissa and ordinate are in the ratio 3:2.

304) A rectangle field has to be cut out and its boundary marked with fencing with a given wire of length 100m.
(a)Represent the above situation using a linear equation
(b)Also plot its graph

305) Determine the point on the graph of the linear equation 2x + 5y = 19, whose ordinate is $1\frac{1}{2}$ times its abscissa.

306) Let y varies directly as x. If y = 12 when x = 4, then write a linear equation. What is value of y when x = 5?

307) Draw the graph of the equation, represented by a straight line which is parallel to the X-axis and at a distance of 3 units below it.

308) Draw a triangle whose sides are represented by x = 0,y = 0 and x + y = 3 in the cartesian system. Also, find the coordinates of its vertices.

309) The point (2, 3) lies on the graph of the linear equation 3x - (a - 1)y = 2a - 1. If the same point also lies on the graph of the linear equation 5x + (1- 2a) y = 3b, then find the value of b.

310) (i) Find the point. where line 4x + y = 8 meets X-axis.
(ii) Find the point, where line 3x + 4y = 6 meets X-axis.
(iii) Find the point, where lines 4x + y = 8 and 3x + 4 Y = 6 meet each other.

311) Determine the point on the graph of the linear equation 2x+3y=15, whose abscissa is$3\frac{1}{2}$ times its ordinate.

312) Let y varies directly as x. If y = 54 when x = 9, then write a linear equation. What is the value of y, when x = 10?

313) Check whether equations are linear. Justify .
$(i)\sqrt{x}+\frac{1}{\sqrt{x}}=3$
$(ii)\sqrt{2}x+\sqrt{3}y=0$

314) Find the value of k, so that x = -1 and y = -1 is a solution of 2x + ky = 19. Find two more solutions of the resulting equation.

315) The cost of a toy elephant is same as that of cost of 3 balls. Express this statement as a linear equation in two variables. Also, draw its graph.

316) Alka and Noori, two students of Class IX, together contributed Rs 500 towards Prime Minister's Relief fund to help earthquake victims.
Write a linear equation which satisfies this data and draw the graph of the same.

317) Cost of 1 pen is Rs x and that of 1 pencil is Rs y. Cost of 2 pens and 3 pencils together is Rs 18. Write a linear equation to represent this information. Draw the graph for the same.

318) Express y in terms of x in the linear equation 2x + 3y = 11. Find the points, where the line represented by the equation cuts Y-axis and X-axis.

319) If the temperature of a liquid can be measured in Kelvin units as X^o K or in Fahrenheit units as y^o F, the relation between the two systems of measurement of
temperature is given by the linear equation
$y=\frac{9}{5}(x-273)+32$
(i) Find the temperature of the liquid in Fahrenheit.if the temperature of the liquid is 313 K.
(ii) If the temperature is 158°F, then find the temperature in Kelvin.

320) When 5 times the larger of two numbers is divided by the smaller, the quotient and remainder are 2 and 11, respectively. From a linear equation in two variables for above and give its two solutions.

321) Give the equation of a line passing through (2,14). How many more such lines are there? Write the equation in the form ax+by+c=0.

322) When 5 times the larger of the two numbers is divided by the smaller, the quotient and remainder are 2 and 9 respectively. Form a linear equation in two variables. Write it in standard form.

323) ABCD is a square. Co-ordinates of A and C are (-1,-1) and (1,1) respectively. Write the coordinates of B and D. Also write the equations of all the sides of square.

324) If the point (-1,-5) lies on the graph of 3x=ay+7, then find the value of 'a'.

325) Given the equation 2x+y=7
(i) What is the value of x, when the value of y is 3?
(ii) What is the value of y, when the value of x is 4?
(iii) Find one more solution for the above equation.

326) For what value of k, the linear equation 2x+ky=8 has x=2 and y=1 as its solution? If x=4, then find the value of y.

327) Show that the points A(1,2), B(-1,-16) and C(0,-7) lie on the graph of the linear equation y=9x-7

328) For what value of p; x=2, y=3 is a solution of (p+1)x-(2p+3)y-1=0 and write the equation.

329) Determine the point on the graph of the linear equation x+y=6, where ordinate is 2 times its abscissa.

330) If the point (3,4) lie on the graph of the linear equation 3y = kx + 7, then find the value of k. Also find two more solutions of the equation.

331) Find k in each case, if x=2, y=1 is a solution of the equations:
(i) 3x+2y=k,
(ii) 2x-ky=6
(iii) $\frac{x}{4}+\frac{y}{3}=5k$

332) Find three different solutions for the equation 3x+2y=1

333) Find two different solutions of the equation 4x+3y=12 from its graph.

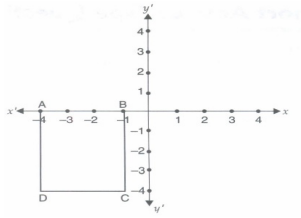
334) Draw the graph of 2x-3y-12=0 on the graph paper.

335) Solve the equation $\frac{x}{3}+2=2x-3$ and represent the solution on the Cartesian plane.

336) Write three solutions of the equation 3x=y+3. Draw its graph and find the points where the graph intersects the axes.

337) Write the equation $\frac{x}{2}+\frac{3y}{5}=-1$ in standard form and draw the graph.

338) ABCD is a rectangle. Write the equation of its sides. Also, find its area.



339) The cost of a pen is Rs. 16. Taking number of pens bought as x and total cost as y, form a linear equation in x and y and draw its graph. Find the cost of 6 pens from the graph.

4 Marks 62 x 4 = 248

340) Express the linear equation 7=2x in the form ax+by+c=0 and also write the values of a, b and c.

341) Compare the equation $\frac{x}{3}+\frac{3}{2}y+4=2y-3$ and lx+my-n=0 and write the value of l, m and n.

342) Write the equation 2x=y in the form ax+by+c=0 and find the values of a, b, c in the equation.How many solution this equation has?

343) Express the following statement as a linear equation in two variables by taking present ages (in years) of father and son as x and y, respectively.Age of father 5 years ago was two years ago was teo years more than 7 times the age of his son at that time.

344) Express x=3y in the form ax+by+c=0 and indicate the values of a, b and c.Write two solutions of the equation.

345) Find at least 32 solutions for the following linear equation in two variables:
2x+5y=13

346) Find the value of 'm' if (-m, 3) is a solution of equation 4x+9y-3=0

347) If x=-2, y=6 is solution of equation 3ax+2by=6 then find the value of b from 2(a-b)+2(3b-4)=4

348) Express y in terms of x in the equation x+2y=8.Find the points where the line represented by this equation cuts x-axis and y-axis

349) Find the coordinates of the points where the line representing the equation $\frac{x}{4}=1-\frac{y}{6}$cuts the x-axis and the y-axis

350) Determine the point on the graph of the equation 2x+5y=20 where x-coordinate is $\frac{5}{2}$ times its ordinate.

351) Find three different solutions of the Table of solutions equation: 4x + 3y = 12, from its graph.

352) Draw the graph of the equation 3x + y = 8. Use it to find some solutions of the equation and check from the graph whether x = 2, y = 2 is a solution.

353) Draw the graph of the linear equation $y=\frac{2}{3}x+\frac{1}{3}$.Check from the graph that (7, 5) is a solution of the linear equation

354) Draw the graph of linear equation 2x + y = 8 on Cartesian plane.Write the coordinates of the points where this line intersects x-axis and y-axis.

355) Draw the graph of linear equation 4x + 3y = 36. From the graph, find the value of y when x = 3 and value of x when y = 6.

356) Draw the graph of the equations x = 3 and 4x = 3y in the same graph.Find the area of the triangle formed by these two lines and the x-axis

357) Give the equations of two lines passing through (1, 2). How many more such lines are there and why?

358) Force applied on a body is directly proportional to the acceleration produced in the body.Write an equation to express the situation and plot the graph of the equation taking constant to be 5 units.

359) If x is the number of hours a labourer is on work and y his wages in rupees then y = 4x + 3. Draw the work wages graph of this equation. From the graph, find the wages of a labourer who puts in 4 hours of work

360) A part of family budget on milk is constant and is fixed at Rs.500, while the other is variable and it depends on the need for milk at the rate of Rs.20 per litre.If extra milk taken is x litre and total expenditure on milk is Rs y, then write a linear equation for this problem. Draw its graph.

361) Rohit is driving his car at a uniform speed of 80 km per hour. Draw time-distance graph taking time along x-axis and distance along y-axis.

362) Solve for x:
$3x - 12 + \frac{3}{7}x = 2(x - 1)$
What type of graph is it in two dimensions?

363) Draw the graph of 2X + Y = 6 and find the point where graph intersects Y-axis.

364) The following observed values of x and y are thought to satisfy a linear equation. Write the linear equation.

x	6	-6
y	-2	6

365) Draw the graph of the following equations on the same graph sheet. x = 4, x = 2, y = 1, y - 3 = 0 Also, find the area enclosed between these lines.

366) The cost of a shirt of a particular brand is Rs 1000. Write a linear equation, when the cost of x shirts is Rs y. Draw the graph of this equation and find the cost of 12 such shirts from the graph.

367) Two years later, a father will be 8 yr more than three times the age of his son. Taking the present ages of father and son as x and y respectively, write a linear equation for the above and draw its graph. From the gra.ph, find the age of the father, when the son's age is 10 yr.

368) A man hires an auto rickshaw to cover a certain distance. The fare is Rs 10 for first kilometre and Rs7 for subsequent kilometres.Taking total distance covered as x km and total fare as Rs y.
(i) Write a linear equation for this.
(ii) The man covers a distance of 16 km and gave Rs 120 to the auto driver. Auto driver said, "It is not the correct amount" and returned him the balance. Find the correct amount paid back by the auto driver.
(iii) Which value is depicted here by the auto driver?

369) Sonia distributed chocolates in an orphanage. On her birthday, she gave 5 chocolates to each child and 20 chocolates to adults. Taking number of children as x and total chocolates distributed as y.
(i) Form a linear equation.
(ii) If she distributed 145 chocolates, then how many children are there in the orphanage?
(iii) If there are 20 children, then find the required number of chocolates.
(iv) Write the value depicted here by Sonia.

370) In a housing society, people decided to do rainwater harvesting. Rainwater is collected in the underground tank at the rate of 30 cm^3 /s. Taking volume of water collected in x s as y cm^3.
(i) Form a linear equation.
(ii) Write it in standard form as
ax + by + c = o.
(iii) Find the values of a, band c in part (ii).
(iv) Which value is promoted by the members of this society?

371) i) Every six months, the price of petrol increases at the rate of Rs 4 per litre. Taking the price of petrol in December 2011 as x and the present price of petrol as y, form a linear equation showing amount spent on petrol in December 2012.
(ii) Due to the continuous rise in the petrol price, people are shifting towards CNG whose price increases at the rate of Rs 3 per litre in a year. Form a linear equation taking the price of CNG in December 2011 as a and in December 2012 as b.
(iii) Which fuel will you prefer and why?
(iv) Which value is depicted by using CNG over petrol?

372) Find any four different solutions of the equation 2x - 5y = 10.

373) For the following pairs of linear equations, find solutions of the form
x = a,y = 0 andx = 0,y = b.
(i) 3x + 2Y = 6 and 5x - 2Y = 10
(ii) 9.,x + 7Y = 63 and x - y = 10
Do they have any such common solution?

374) When the numerator of a fraction is increased by 2, the fraction reduces to 1/3. Let numerator and denominator be x and j; respectively. Write the given data in form of a linear equation in two variables.

375) If the point (4, 3) lies on the graph of the linear equation 3x - ay = 6, then find whether (-2, - 6) also lies on the same graph? Draw graph of this equation.

376) Equation of three lines a, band c in the following graph are x + y = 0, x - y = 0 and y = 2 (may not be written in an order).

377) Water is flowing into a water tank at the rate of 20 cu cm/s. If the volume of water collected in x's is y cu cm, then write a linear equation and draw the graph of linear equation. Find the volume of water after 5 s.

378) Ravish tells his daughter Aarushi, "7 yr ago, I was seven times as old as you were then. Also, three years from now, I shall be three times as old as you will be." If present ages of Aarushi and Ravish are x and y yr. respectively, then represent this situation algebraically as well as graphically.

379) Mrs.Chauhan lost her purse containing Rs 50 and Rs 100 notes amount to Rs 1500 in a shop. Next day shopkeeper found the purse during dusting. He immediately went to Mrs.Chauhan's house and returned the purse and rupees. Mrs.Chauhan appreciates the shopkeeper for his act.
(i) Represent the situation as a linear equation and draw the graph.
(ii) What value do you learn from shopkeeper's act?

380) Give the geometric representation of y=4 as an equation in:
(i) One Variable
(ii) Two Variable

381) Draw the graph of linear equation 2x+y=8 on Cartesian plane. Write the coordinates of the points where this line intersects x-axis and the y-points where this line intersects x-axis and y-axis.

382) Solve 5x-2=3x-8 and represent the solution
(i) on a number line
(ii) in the cartesian plane

383) Draw the graph of the linear equation x+y=7. Verify from the graph that (8,-1) is a solution of the equation x+y=7

384) Draw the graph of $\frac{2}{3}x - y = 2$ and find the points where it cuts the co-ordinate axes.

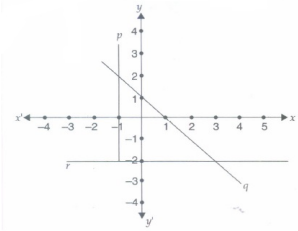
385) Draw the graph of the linear equation 3x+4y=6. Find the points where the line representing the equation 3x+4y=6 cuts the axes of x and y.

386) Fabrenheit (F) and Celcius (C) are two different units of temperature and the relation between them is given by $C = \frac{5}{9}(F - 32)$. Draw the graph for this relation. At what temperature both units read the same.

387) The auto rikshaw fare in a city is charged Rs 10 for first kilometre and @ Rs. 4 per kilometer for subsequent distance covered. Write the linear equation to express the above statement. Draw the graph of the linear equation.

388) Draw the graph of linear equations x+y=10 and 2x-y=5 and find the point of intersection.

389) Write the equation of lines p and r in the given graph.
A student answered the equation of a line 'q' as x+y=1. Did he answered correctly? Also, find the area of lines enclosed between p,q and r.



390) Draw the graph of x+y=3 and 2x+2y=8 on the same axes. What does the graph of these lines represent?

391) Shade the triangle formed by the graphs of 2x-y=4, x+y=2 and the y-axis. Write the coordinates of vertices of the triangle.

392) Ramesh is driving his car with a uniform speed of 90 km per hour. Draw the time-distance graph on the graph paper. From the graph, find the distance travelled by him in:
(i) $\frac{1}{2}$ hour
(ii) 2 hours

393) Draw the graph of x=3y-4. Find the :
(i) value of y, when x=-1,
(ii) value of x, when y=5

394) Solve the equation 3x+4=5x+8 and represent the solution on (i) the number line (ii) the cartesian plane. What do you get as the representation of the solution on the cartesian plane? In cartesian planes, how many solutions this equation has?

395) A student Amit of class IX is unable to write in his examination, due to fracture in his arm. Akhil a student of class Vi writes for him. The sum of their ages is 25 years.
(i) Write a linear equation for the above situation and represent it graphically.
(ii) Find the age of Aknil from the graph, when age of Amit is 14 years.

396) The ratio of girls and boys in a class is 1:3. Set up an equation between the students of a class and boys and then draw its graph. Also find the number of boys in a class of 40 students from the graph.

397) For the linear equation 3x-5y-15=0, find the points where its graph intersecs x and y axis. Using these, draw the graph of the equation. And find its area.

398) At what point does the graph of the linear equation 2x+3y=9 meet a line which is a parallel to te y-axis, at a distance of 4 units from the origin and on the right of the y-axis?

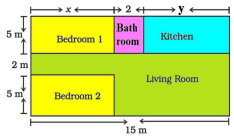
399) Draw the graph of the equation 3x-5y-15=0. Write the coordinates of the point where the line intersects the two axes.

400) In an election, a good candidate may lose because 40% of voters do not cast their votes due to various reasons. Form an equation and draw the graph with data. Form the graph, Find:
(i) the total number of voters, if 300 voters cast their votes
(ii) the number of votes cast, if the total number of voters are 1000.
(iii) What is its value.

401) Ram is sitting on a chair in a corner of a huge park. His son Ravi is a student of class X. Mr. Ram asks him, "Draw a straight line passing through my feet him, "Draw a straight line passing through my feet and the centre of the park in 2 minutes. Ravi do so.
(i) Find the co-ordinate of the feet of Mr. Ram if the y-coordinate of the feet is -19.5 and the equation of the line x+y=0
(ii) Find the co-ordinate of the feet of mR. Ram if the y-coordinate of the feet is 20.5 and the equation of the line is x=y.
(iii) Which mathematical concept is used in the above problem?
(iv) Which values do you learn from Ravi?

Case Study Questions 6 x 4 = 24

402) In the below given layout, the design and measurements has been made such that area of two bedrooms and Kitchen together is 95 sq. m.



(i) The area of two bedrooms and kitchen are respectively equal to

(a) 5x, 5y **(b) 10x, 5y**

(c) 5x, 10y **(c) x, y**

(ii) Find the length of the outer boundary of the layout.

(a) 27 m **(b) 15 m** **(c) 50 m** **(d) 54 m**

(iii) The pair of linear equation in two variables formed from the statements are

(a) x + y = 13, x + y = 9

(b) 2x + y = 13, x + y = 9

(c) x + y = 13, 2x + y = 9

(d) None of the above

(iv) Which is the solution satisfying both the equations formed in (iii)?

(a) x = 7, y = 6 **(b) x = 8, y = 5**

(c) x = 6, y = 7 **(d) x = 5, y = 8**

(v) Find the area of each bedroom.

(a) 30 sq. m **(b) 35 sq. m**

(c) 65 sq. m **(d) 42 sq. m**

403) Deepak bought 3 notebooks and 2 pens for Rs. 80. His friend Ram said that price of each notebook could be Rs. 25. Then three notebooks would cost Rs.75, the two pens would cost Rs.5 and each pen could be for Rs. 2.50. Another friend Ajay felt that Rs. 2.50 for one pen was too little. It should be at least Rs. 16. Then the price of each notebook would also be Rs.16.

Lohith also bought the same types of notebooks and pens as Aditya. He paid 110 for 4 notebooks and 3 pens. Later, Deepak guess the cost of one pen is Rs. 10 and Lohith guess the cost of one notebook is Rs. 30.

(i) Form the pair of linear equations in two variables from this situation by taking cost of one notebook as Rs. x and cost of one pen as Rs. y.

(a) 3x + 2y = 80 and 4x + 3y = 110

(b) 2x + 3y = 80 and 3x + 4y = 110

(c) x + y = 80 and x + y = 110

(d) 3x + 2y = 110 and 4x + 3y = 80

(ii) Which is the solution satisfying both the equations formed in (i)?

(a) x = 10, y = 20 **(b) x = 20, y = 10**

(c) x = 15, y = 15 **(d) none of these**

(iii) Find the cost of one pen?

(a) Rs. 20 **(b) Rs. 10** **(c) Rs. 5** **(d) Rs. 15**

(iv) Find the total cost if they will purchase the same type of 15 notebooks and 12 pens.

(a) Rs. 400 **(b) Rs. 350** **(c) Rs. 450** **(d) Rs. 420**

(v) Find whose estimation is correct in the given statement.

(a) Deepak **(b) Lohith** **(c) Ram** **(d) Ajay**

404) Prime Minister's National Relief Fund (also called PMNRF in short) is the fund raised to provide support for people affected by natural and man-made disasters. Natural disasters that are covered under this include flood, cyclone, earthquake etc. Man-made disasters that are included are major accidents, acid attacks, riots, etc.

Two friends Sita and Gita, together contributed Rs. 200 towards Prime Minister's Relief Fund. Answer the following :

(a) Which out of the following is not the linear equation in two variables ?

(i) $2x = 3$ **(iii) $x^2 + x = 1$**

(ii) $4 = 5x - 4y$ **(iv) $x - \sqrt{2}y = 3$**

(b) How to represent the above situation in linear equations in two variables ?

(i) $2x + y = 200$ **(ii) $x + y = 200$**

(iii) $200x = y$ **(iv) $200 + x = y$**

(c) If Sita contributed Rs. 76, then how much was contributed by Gita ?

(i) Rs. 120 **(ii) Rs. 123**

(iii) Rs. 124 **(iv) Rs. 125**

(d) If both contributed equally, then how much is contributed by each?

(i) Rs. 50, Rs. 150 **(ii) Rs. 100, Rs. 100**

(iii) Rs. 50, Rs. 50 **(iv) Rs. 120, Rs. 120**

(e) Which is the standard form of linear equations $x = -5$?

(i) $x + 5 = 0$ **(ii) $1.x - 5 = 0$**

(iii) $1.x + 0.y + 5 = 0$ **(iv) $1.x + 0.y = 5$**

405) Sanjay bought 5 notebooks and 2 pens for Rs. 120. He told to guess the cost of each notebook and pen to his friends Mohan and Anil. Sanjay has given the clue that both the costs are positive integers and divisible by 5 such that the cost of a notebook is greater than that of a pen.

Now, Mohan and Anil tried to guess.

Mohan said that price of each notebook could be Rs. 18. Then five notebooks would cost Rs.90, the two pens would cost Rs.30 and each pen could be for Rs. 15. Anil felt that Rs. 18 for one notebook was too little. It should be at least Rs. 20. Then the price of each pen would also be Rs.10.

(i) Form the linear equations in two variables from this situation by taking cost of one notebook as Rs. x and cost of one pen as Rs. y.

(a) $2x + 5y = 120$ **(b) $5x + y = 120$**

(c) $x + y = 120$ **(d) $5x + 2y = 120$**

(ii) Which is the solution of the equations formed in (i)?

(a) $x = 10, y = 20$ **(b) $x = 20, y = 10$**

(c) $x = 15, y = 15$ **(d) none of these**

(c) If the cost of one notebook is Rs. 15 and cost of one pen is 10, then find the total amount.

(i) Rs. 120 **(ii) Rs. 95**

(iii) Rs. 105 **(iv) Rs. 125**

(d) If the cost of one notebook is twice the cost of one pen, then find the cost of one pen?

(a) Rs. 20 **(b) Rs. 10**

(c) Rs. 5 **(d) Rs. 15**

(e) Which is the standard form of linear equations $y = 4$?

(i) $y - 4 = 0$ **(ii) $1.y + 4 = 0$**

(iii) $0.x + 1.y + 4 = 0$ **(iv) $0.x + 1.y - 4 = 0$**

406) On his birthday, Manoj planned that this time he celebrates his birthday in a small orphanage centre. He bought apples to give to children and adults working there. Manoj donated 2 apples to each children and 3 apples to each adult working there along with birthday cake. He distributed 60 total apples.

(a) How to represent the above situation in linear equations in two variables by taking the number of children as 'x' and the number of adults as 'y'?

(i) 2x + y = 60 **(iii) 2x + 3y =60**

(ii) 3x + 2y = 60 **(iv) 3x + y =60**

(b) If the number of children is 15, then find the number of adults?

(i) 10 **(iii) 15**

(ii) 25 **(iv) 20**

(c) If the number of adults is 12, then find the number of children?

(i) 12 **(iii) 15**

(ii) 14 **(iv) 18**

(d) Find the value of b, if x = 5, y = 0 is a solution of the equation 3x + 5y = b.

(i) 12 **(iii) 15**

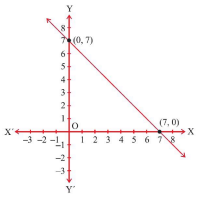
(ii) 14 **(iv) 18**

(e) Which is the standard form of linear equations in two variables: y - x = 5?

(i) 1.y - 1.x - 5 = 0 **(ii) 1.x - 1.y + 5 = 0**

(iii) 1.x + 0.y + 5 = 0 **(iv) 1.x - 1.y -5 = 0**

407) Aditya purchased two types of chocolates A and B at the rate of Rs. x and Rs. y respectively. The total amount spent is Rs. 7. After reaching home, he forms a linear equation in two variables for two types of chocolates. He prepares a table and a graph of the linear equation as shown in adjoining graph:



(a) How a represent the above situation in linear equations in two variables?

(i) 2x + y = 7 **(iii) x + y = 7**

(ii) x = 7 **(iv) y = 7**

(b) If the cost of chocolates A is 5, then find the cost of chocolates B?

(i) 3 **(iii) 1**

(ii) 5 **(iv) 2**

(c) Which of the follwing point lies on the line x + y = 7?

(i) (3, 4) **(iii) (1, 5)**

(ii) (5, 4) **(iv) (2, 6)**

(d) The point where the line x + y = 7 intersect y-axis is

(i) (0, 4) **(iii) (7, 0)**

(ii) (0, 6) **(iv) (0, 7)**

(e) For what value of k, x = 2 and y = -1 is a soluation of x + 3y -k = 0.

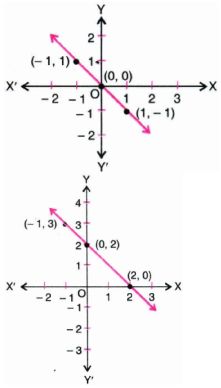
(i) 1 **(iii) -1**

(ii) -2 **(iv) 2**

5 Marks 22 x 5 = 110

408) The cost of a notebook is twice the cost of a pen. Write a linear equation in two variables to represent this statement.
(Take the cost of a notebook to be Rs x and that of a pen to be Rs y)

409) From the choices given below, choose the equation whose graphs are given in Fig. (a) and Fig. (b).



For Fig (a)
(i) y = x
(ii) x + y = 0
(iii) y = 2x
(iv) 2 + 3y = 7x

For Fig(b)
(i) y = x + 2
(ii) y = x - 2
(iii) y = - x + 2
(iv) x + 2y = 6

410) If the work done by a body on application of a constant force is directly proportional to the distance travelled by the body, then express this in the form of an equation in two variables and draw the graph of the same by taking the .constant force as 5 units, Also, read from the graph the work done, when the distance travelled by the body is
(i) 2 units
(ii) 0 unit.

411) Give the geometric representations of 2x + 9 = 0 as an equation
(i) in one variable.
(ii) in two variables.

412) Express the following linear equations in the form ax + by + c = 0 and indicate the values of a, b and c in each case:
(i) 2x + 3y = $9.3\overline{5}$
(ii) x - $\frac{y}{5}$ - 10 = 0
(iii) -2x + 3y = 6
(iv) x = 3y
(v) 2x = -5y
(vi) 3x + 2 = 0
(vii) Y - 2 = 0
(viii) 5 = 2x

413) Write four solutions for each of the following equations:
(i) 2x + y = 7
(ii) πx + y = 9
(iii) x = 4y

414) Draw the graph of each of the following linear equations in two variables:
(i) x + y =4
(ii) x - y = 2
(iii) y = 3x
(iv) 3 = 2x + y

415) In countries like the USA and Canada, the temperature is measured in Fahrenheit, whereas in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius.
F = $\left(\frac{9}{5}\right)$ C + 32
(i) Draw the graph of the linear equation above using Celsius for the x-axis and Fahrenheit for the y-axis.
(ii) If the temperature is 30°C, what is the temperature in Fahrenheit?
(iii) If the temperature is 95°F, what is the temperature in Celsius?
(iv) If the temperature is 0°C, what is the temperature in Fahrenheit and if the temperature is 0°F, what is the temperature in Celsius?
(v) Is there a temperature that is numerically the same in both Fahrenheit and Celsius? If yes, find it.

416) Express the following linear equations in the form ax + by + c = 0 and indicate the values of a, b and c in e.a.ch case.
$2x + 3y = 9.3\overline{5}$

417) Write four solutions for each of the following equations.
2x + y = 7

418) Find the value of k, if x = 2 and y = 1 is a solution of the equation 2x + 3y = k.

419) Check, which of the followings are solution of the equation x - 2y = 4 and which are not?
(i) (0,2) (ii) (2, 0) (iii) (4, 0)

420) Draw the graph of each of the following linear equations in two variables.
x + y =4

421) Give the equations of two lines passing through (2,14).How many more such lines are there and why?

422) If the point (3,4) lies on the graph of the equation 3y = ax + 7, then find the value of a.

423) The taxi fare in a city is as follows. For the first kilometre, the fare is Rs 8 and for the subsequent distance, it is Rs 5 per km. Taking the distance covered as x km and the total fare as Rs y, write a linear equation for this information and draw its graph.

424) Show that x = 1, y = 3 satisfy the linear equation 3x - 4y + 9 = 0.

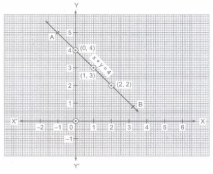
425) Write whether the following statements are True or False? Justify your answers.
(i) ax + by + c, where a, b and c are real numbers, is a linear equation in two variables .
(ii) A linear equation 2x + 3y = 5 has a unique solution.
(iii) All the points (2, 0), (-3, 0), (4, 2) and (0, 5) lie on the x-axis.
(iv) The line parallel to y-axis at a distance 4 units to the left of y-axis is given by the equation x = -4.
(v) The graph of the equation y = mx + c passes through the origin.

426) Write whether the following statement is True or False? Justify your answer. The co-ordinates of points given in the table:

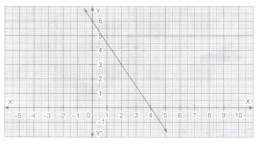
x	0	1	2	3	4
y	2	4	6	8	10

Represent some of the solutions of the equation 2x + 2 = y.

427) Look at the following graphical representation of an equation. Which of the points (0, 0) (0,4) or (-1,4) is a solution of the equation?



428) Look at the following graphical representation of an equation. Which of the following is not its solution?
(a) (6, 0)
(b) (4, 0)
(c) (2, 3)



429) In countries like USA and Canada, temperature is measured in Fahrenheit, whereas in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius.
$F = \left(\frac{9}{5}\right) C + 32$
(i) If the temperature is 0°C, what is the temperature in Fahrenheit and if the temperature is 0°F, what is the
(ii)temperature in Celsius?
Is there a temperature which is numerically the same in both Fahrenheit and Celsius? If yes, find it.

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