EduSahara™ Assignment

Name : Parallel and Perpendicular Lines

Chapter : Equation of a Straight Line

Grade : ICSE Grade X



1. The slope of x-axis is

   (i) 0 (ii) undefined (iii) 90 (iv) -1 (v) 1

2. The slope of y-axis is

   (i) undefined (ii) -1 (iii) 0 (iv) 1 (v) 90

3. The slope of the line joining the points $((-3),(-5))$ and $((-4),4)$ is

   (i) -10 (ii) -9 (iii) -7 (iv) -8 (v) -12

4. The slope of the line perpendicular to the line passing through the points $((-6),5)$ and $(7,0)$ is

   (i) $\frac{11}{5}$ (ii) 3 (iii) $\frac{13}{5}$ (iv) $\frac{17}{7}$

5. Two straight lines are parallel if and only if their slopes are

   (i) undefined (ii) unequal (iii) 0 (iv) 1 (v) equal

6. Two straight lines are perpendicular if and only if the product of their slopes is

   (i) -1 (ii) 1 (iii) 0 (iv) undefined (v) 90

7. The slope of a line parallel to the line $(7x+12y-20)=0$ is

   (i) $(\frac{-7}{10})$ (ii) $(\frac{-7}{12})$ (iii) $(\frac{-5}{12})$ (iv) $(\frac{-1}{2})$ (v) $(\frac{-3}{4})$

8. The slope of a line perpendicular to the line $(12x-y+44)=0$ is

   (i) $(\frac{-1}{12})$ (ii) $(\frac{-1}{10})$ (iii) $(\frac{-1}{14})$ (iv) $(\frac{-1}{4})$ (v) $\frac{1}{12}$

9. The equation of x-axis is

   (i) $y=x$ (ii) $y=1$ (iii) $x=0$ (iv) $x=1$ (v) $y=0$

10. The equation of y-axis is

    (i) $x=1$ (ii) $y=1$ (iii) $x=0$ (iv) $y=x$ (v) $y=0$

11. The equation of the line passing through $((-7),(-3))$ and parallel to the line $(7x-2y+7)=0$ is

    (i) $(-8x-6y-8)=0$ (ii) $(-7x+2y+51)=0$ (iii) $(-7x+2y-43)=0$ (iv) $(-15x-4y+43)=0$

    (v) $(-10x+8y-46)=0$

12. The equation of the line passing through $((-5),(-8))$ and perpendicular to the line $(4x+6y-50)=0$ is

    (i) $(7y-49)=0$ (ii) $(-15x+7y-19)=0$ (iii) $(-3x+2y+1)=0$ (iv) $(-3x+2y-29)=0$

    (v) $(4x+13y-71)=0$

13. The equation of the line passing through $(8,(-3))$ and parallel to the join of points $((-5),(-8))$ and $((-5),(-4))$ is

(i) $(6x+7y-27)=0$ (ii) $(x-13y-47)=0$ (iii) $(x-8)=0$ (iv) $(11x-6y+7)=0$ (v) $(5x-13y-79)=0$

14. The equation of the line passing through $(5,(-8))$ and perpendicular to the join of points $((-6),8)$ and $((-8),(-3))$ is

(i) $(-5x-7y+26)=0$ (ii) $(-16x-11y-8)=0$ (iii) $(11x+4y-23)=0$ (iv) $(-5x-13y-79)=0$

(v) $(2x+11y+78)=0$

15. The slope of any line parallel to x-axis is

(i) undefined (ii) 90 (iii) zero (iv) -1 (v) 1

16. The slope of any line parallel to y-axis is

(i) undefined (ii) 90 (iii) -1 (iv) 1 (v) zero

17. The ratio of coefficients of x and y in the equations of any two parallel lines is

(i) same (ii) 1 (iii) not same (iv) 2 (v) not proportional

18. Two non-vertical lines are parallel if and only if their slopes are

(i) not proportional (ii) 2 (iii) same (iv) 1 (v) not same

19. Any line parallel to x-axis is

(i) a horizontal line (ii) a curved line (iii) an oblique line (iv) a vertical line

20. Any line parallel to y-axis is

(i) a vertical line (ii) a horizontal line (iii) an oblique line (iv) a curved line

21. A line which is neither parallel to x-axis nor y-axis is

(i) a vertical line (ii) a horizontal line (iii) an oblique line (iv) a curved line

22. Which of the following are true?

a) Slope of any line parallel to y-axis is not defined
b) Slope of any line parallel to y-axis is zero
c) Slope of any line parallel to x-axis is not defined
d) Slope of any line parallel to x-axis is zero

(i) {b,d,a} (ii) {b,c,a} (iii) {c,d} (iv) {a,d} (v) {b,a}

23. Which of the following are true ?

a) Equations of two parallel lines differ in the constant and coefficients of x and y will not be same
b) Equations of two parallel lines have the same constant and coefficients of x and y will be same
c) Equations of two parallel lines differ in the constant term only, coefficients of x and y will be same
d) Equations of two parallel lines have the same constant and coefficients of x and y will not be same

(i) {a,c} (ii) {d,a,c} (iii) {c} (iv) {b,c}

24. Equation of a straight line which is parallel to x-axis (where k is a constant) is

(i) $x=y$ (ii) $x=k$ (iii) $y=0$ (iv) $x=0$ (v) $y=k$

25. Equation of a straight line which is parallel to y-axis (where k is a constant) is

(i) $x=k$ (ii) $x=y$ (iii) $y=0$ (iv) $x=0$ (v) $y=k$

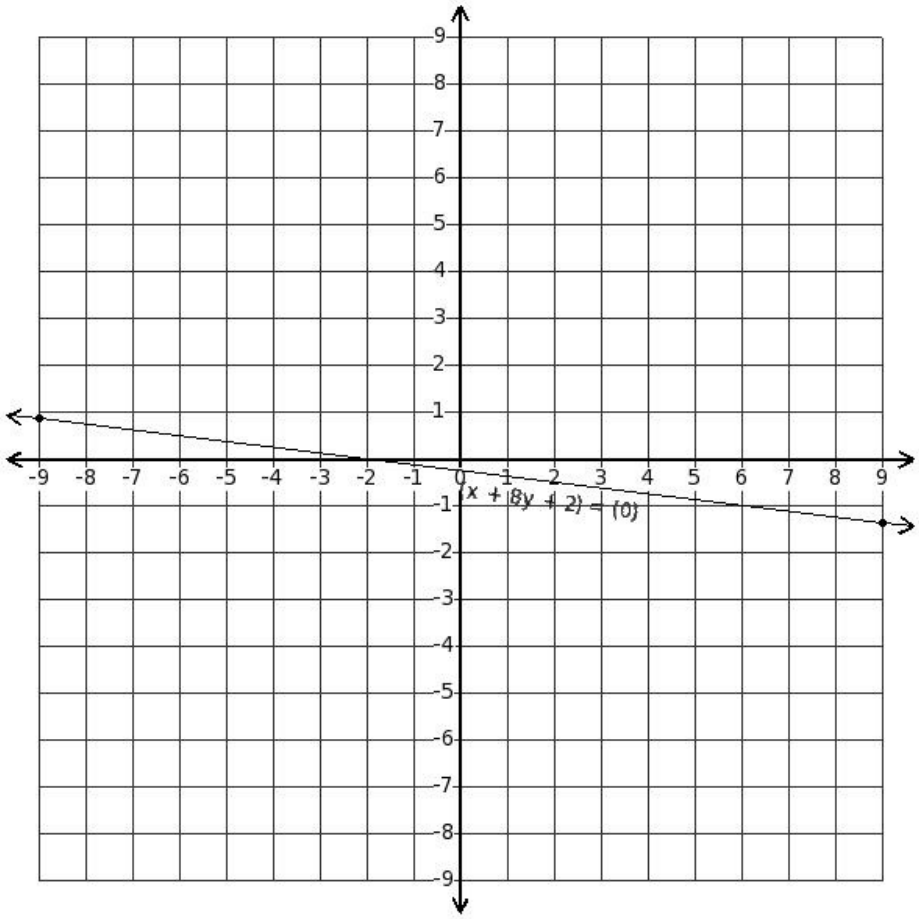
26. The slope of the line $ax+by+c=0$ is

(i) $\frac{-a}{b}$ (ii) b (iii) c (iv) $\frac{-b}{a}$ (v) a

27. In equation of the line $y=mx+c$, the slope is

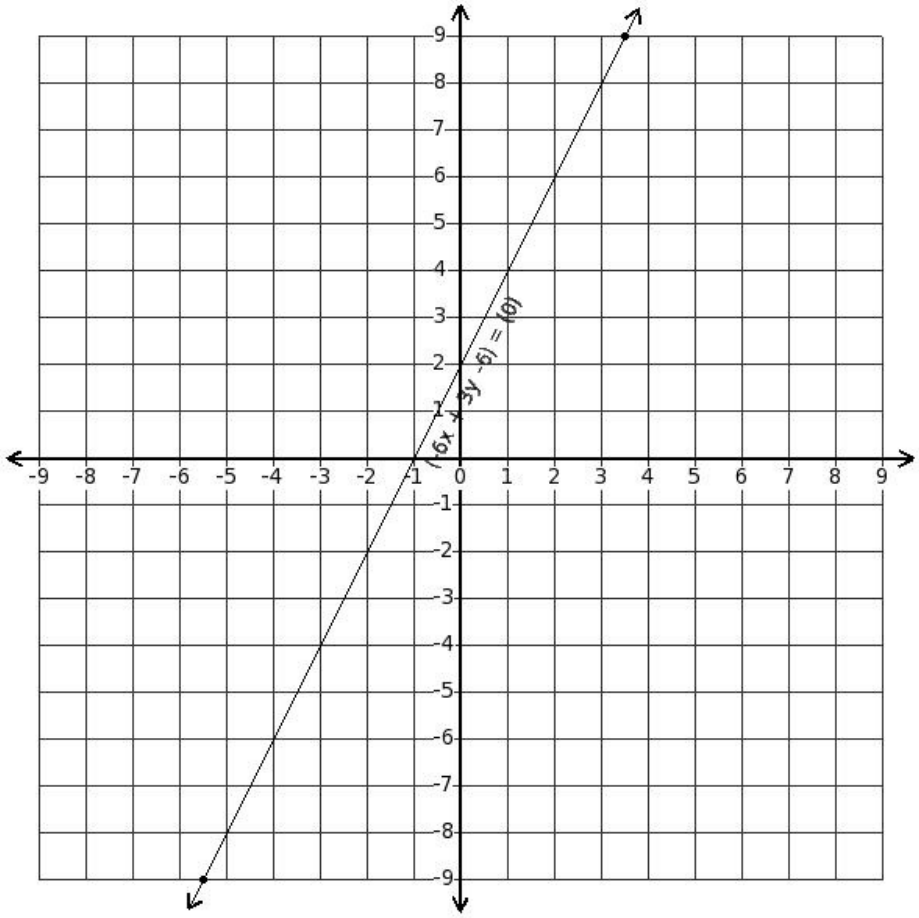
(i) x (ii) c (iii) y (iv) m (v) undefined

28. Find the equation parallel to the given equation




(i) $(-8x+y)=0$ (ii) $(x+8y+4)=0$ (iii) $(-7x+8y+58)=0$ (iv) $(9x+8y+23)=0$

29. Find the equation perpendicular to the given equation




(i) $(3x-6y+2)=0$ (ii) $(-6x+3y-14)=0$ (iii) $(x+2y-6)=0$ (iv) $(-6x+3y-3)=0$

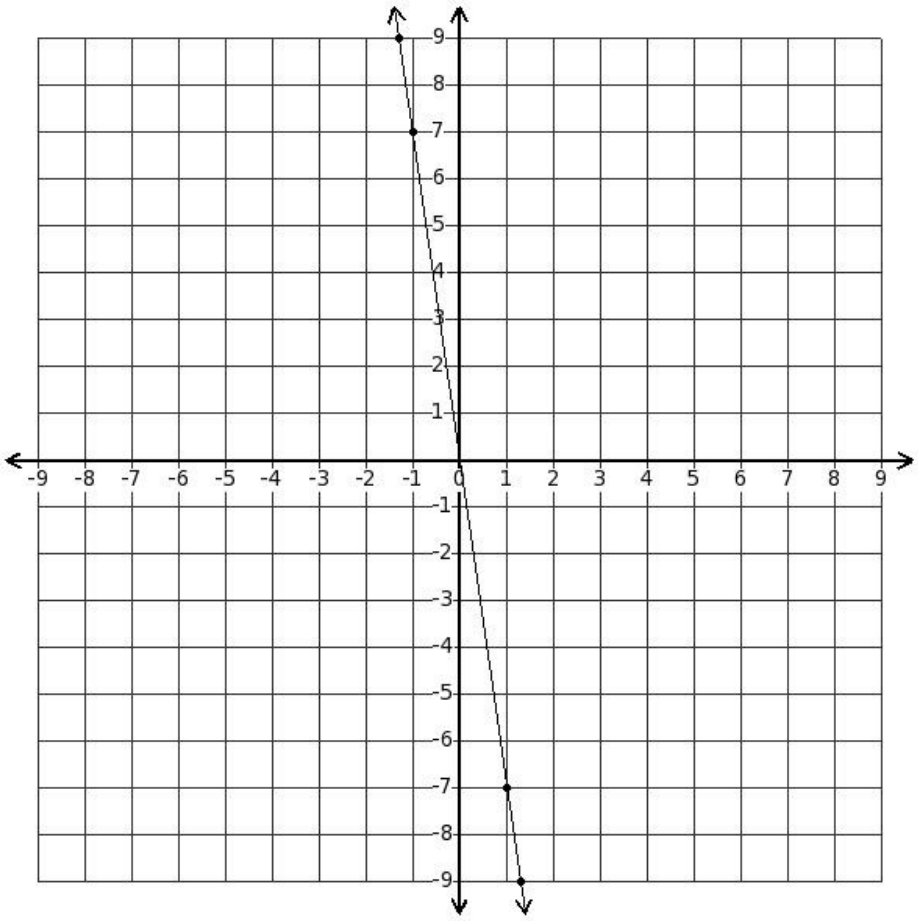
30. Find the equation parallel to the given equation $(2x+3y+4)=0$

(i) $(2x+3y-5)=0$ (ii) $(-3x+2y-23)=0$ (iii) $(-x+3y+5)=0$ (iv) $(-5x+2y-1)=0$

31. Find the equation perpendicular to the given equation $(7x+6y-2)=0$

(i) $(x+6y+35)=0$ (ii) $(-6x+7y+71)=0$ (iii) $(7x+6y-3)=0$ (iv) $(-13x+7y+55)=0$

32. Find the slope of the displayed line



(i) -9 (ii) -5 (iii) -6 (iv) -8 (v) -7

33. The equation of the x-axis is

a) $y=0$
b) $y=1$
c) $x=y$
d) $x=0$
e) $x=1$

(i) {d,e,a} (ii) {b,a} (iii) {c,a} (iv) {a}

34. Find the equation of a straight line parallel to x-axis and passing through the point $((-8),(-3))$

(i) $y=0$ (ii) $y=(-4)$ (iii) $x=(-6)$ (iv) $x=(-8)$ (v) $y=(-3)$

35. Find the equation of a straight line parallel to y-axis and passing through the point $((-2),(-2))$

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

36. The equation of the line passing through $(x_1,y_1)$ and parallel to the line $ax+by+c=0$ is

(i) $(y-y_1)=\frac{-a}{b}(x-x_1)$ (ii) $(y-y_1)=\frac{a}{b}(x-x_1)$ (iii) $(y-y_1)=\frac{c}{b}(x-x_1)$ (iv) $(y-y_1)=\frac{b}{a}(x-x_1)$

37. The equation of the line passing through $(x_1,y_1)$ and perpendicular to the line $ax+by+c=0$ is

(i) $(y-y_1)=\frac{c}{b}(x-x_1)$ (ii) $(y-y_1)=\frac{b}{a}(x-x_1)$ (iii) $(y-y_1)=\frac{a}{b}(x-x_1)$ (iv) $(y-y_1)=\frac{-a}{b}(x-x_1)$

38. The slope of the line passing through the points $(x_1, y_1)$ and $(x_2, y_2)$

(i) $\frac{x_2 + x_1}{y_2 + y_1}$ (ii) $\frac{y_2 - y_1}{x_2 - x_1}$ (iii) $\frac{x_2 - x_1}{y_2 - y_1}$ (iv) $\frac{x_2 - y_1}{y_2 - x_1}$ (v) $\frac{x_2 + y_1}{y_2 + x_1}$

39. The equation of the line parallel to $(-4x-7y-60)=0$ and making a y-intercept of 8 is

(i) $(12x-8y+64)=0$ (ii) $(2x+4y+34)=0$ (iii) $(4x+7y-56)=0$ (iv) $(-2x-3y-28)=0$

(v) $(16x-y+8)=0$

40. The equation of the line perpendicular to $(4y-12)=0$ and making a y-intercept of (-6) is

(i) $(-9x-4y-24)=0$ (ii) $(-3x+3y-9)=0$ (iii) $x=0$ (iv) $(-3x-y-9)=0$ (v) $(-9x)=0$

41. Find the value of k such that $2y=0$ and $(kx + y + 4) = 0$ are parallel to each other

(i) -1 (ii) 1 (iii) -3 (iv) 0 (v) 2

42. Find the value of k such that $(-14x+3y+88)=0$ and $(kx + 14y + 53) = 0$ are perpendicular to each other

(i) 4 (ii) 3 (iii) 2 (iv) 1 (v) 5

43. Find equation of the right bisector of the line segment joining the points $((-1),3)$ and $(7,(-1))$

(i) $(-8x+4y+20)=0$ (ii) $(x+2y-3)=0$ (iii) $(-8x+4y+60)=0$ (iv) $(-8x+4y-20)=0$

(v) $(-8x+4y-76)=0$

44. $(5,0), ((-4),(-1))$ and $((-3),(-5))$ are the vertices of triangle ABC.
Find the equation of the altitude of the triangle through vertex C

(i) $(9x-y+32)=0$ (ii) $(8x+5y+37)=0$ (iii) $(9x+y+32)=0$ (iv) $(-x+4y+5)=0$ (v) $(9x+4y+32)=0$

45. $((-2),1), (3,(-3))$ and $(1,(-8))$ are the vertices of triangle ABC.
Find the equation of the median of the triangle through vertex C

(i) $(-7x-\frac{3}{2}y+3)=0$ (ii) $(-7x+\frac{1}{2}y+3)=0$ (iii) $(\frac{1}{2}x-\frac{7}{2}y-12)=0$ (iv) $(-7x-\frac{1}{2}y+3)=0$

(v) $(\frac{13}{2}x+4y+9)=0$

46. Find the equation of the line which is parallel to the line $(5x+10y+35)=0$ and making a y-intercept of (-3)

(i) $(-10x+3y+15)=0$ (ii) $(2y+6)=0$ (iii) $(-10x+5y+15)=0$ (iv) $(x+2y+6)=0$ (v) $(x+5y+6)=0$

47. Find the x-intercept of the line which is parallel to the line $(-8x-10y+16)=0$ and making a y-intercept of 8

(i) 9 (ii) 10 (iii) 11 (iv) 8 (v) 12

48. The points B $((-2),10)$ and D $((-11),9)$ are the opposite vertices
of a square ABCD. Find the equation of the diagonal AC

(i) $(9x+4y+49)=0$ (ii) $(9x+y+49)=0$ (iii) $(-x+9y-92)=0$ (iv) $(8x+y+49)=0$

(v) $(-x+7y-92)=0$

49. Which of the following pairs of lines are parallel?

(i) $(-6x+y-30)=0, (-6x+y+33)=0$ (ii) $(-6x+y-30)=0, (-5x+6y+73)=0$

(iii) $(-6x+y-30)=0, (x+6y+43)=0$ (iv) $(-6x+y-30)=0, (-7x+y+38)=0$

50. Which of the following pairs of lines are perpendicular?

(i) $(7x-5y-61)=0, (5x+7y-40)=0$ (ii) $(7x-5y-61)=0, (-2x+7y-33)=0$

(iii) $(7x-5y-61)=0, (-7x+5y-14)=0$ (iv) $(7x-5y-61)=0, (-12x+5y-49)=0$

51. The slope of a line is the tangent of the angle made by the line with the

(i) negative x-axis (ii) negative y-axis (iii) positive x-axis (iv) positive y-axis

52. Find the relation between x and y if the points $(x,y), (7,8)$ and $(6,5)$ are collinear

(i) $(-14x+14y-14)=0$ (ii) $(10x-12y-2)=0$ (iii) $(-3x+y+13)=0$ (iv) $(-11x+13y+1)=0$

(v) $(-x+y+1)=0$

53. Find the coordinates of the orthocentre of the triangle whose vertices are $(7,(-4)), ((-7),(-4))$ and $((-2),6)$

(i) $(0,\frac{5}{2})$ (ii) $((-4),(-\frac{3}{2}))$ (iii) $((-1),(-\frac{1}{2}))$ (iv) $((-2),\frac{1}{2})$ (v) $((-3),\frac{3}{2})$

54. The point of intersection of x-axis and y-axis

(i) $(0,2)$ (ii) $(1,1)$ (iii) $(1,0)$ (iv) $(6,0)$ (v) $(0,0)$

55. Find the value of k such that the points $((-5),7), (3,\frac{53}{11})$ and (k,4) are collinear

(i) 6 (ii) 5 (iii) 4 (iv) 9 (v) 7

56. Find the value of k such that the points $((-4),1), ((-\frac{20}{3}),\frac{19}{3})$ and (-8,k) are collinear

(i) 11 (ii) 10 (iii) 9 (iv) 8 (v) 7

57. Which of the following sets of points are collinear?

(i) $(7,(-4)),((-7),(-7)),(3,(-8))$ (ii) $((-6),(-5)),((-5),(-6)),((-6),(-5))$ (iii) $(5,6),(7,7),((-5),8)$

(iv) $((-1),1),((-5),(-4)),((-1),0)$ (v) $((-6),(-2)),((-3),(-3)),(4,(-7))$

58. The points $B((-1),6)$ and $D((-8),5)$ are the opposite vertices of a square ABCD. Find the other two vertices

(i) $((-4),2),((-5),9)$ (ii) $((-2),4),((-5),9)$ (iii) $((-4),2),((-6),10)$ (iv) $((-3),1),((-5),9)$

(v) $((-6),0),((-5),9)$

59. Find the coordinates of the circumcentre of the triangle whose vertices are $(8,(-4)), ((-7),1)$ and $((-7),6)$

(i) $(\frac{19}{6},\frac{5}{2})$ (ii) $(\frac{13}{6},\frac{7}{2})$ (iii) $(\frac{1}{6},\frac{3}{2})$ (iv) $(\frac{25}{6},\frac{11}{2})$ (v) $(\frac{7}{6},\frac{9}{2})$

# Assignment Key

| | | | | | |
|---|---|---|---|---|---|
| 1) (i) | 2) (i) | 3) (ii) | 4) (iii) | 5) (v) | 6) (i) |
| 7) (ii) | 8) (i) | 9) (v) | 10) (iii) | 11) (iii) | 12) (iii) |
| 13) (iii) | 14) (v) | 15) (iii) | 16) (i) | 17) (i) | 18) (iii) |
| 19) (i) | 20) (i) | 21) (iii) | 22) (iv) | 23) (iii) | 24) (v) |
| 25) (i) | 26) (i) | 27) (iv) | 28) (ii) | 29) (iii) | 30) (i) |
| 31) (ii) | 32) (v) | 33) (iv) | 34) (v) | 35) (ii) | 36) (i) |
| 37) (ii) | 38) (ii) | 39) (iii) | 40) (iii) | 41) (iv) | 42) (ii) |
| 43) (i) | 44) (iii) | 45) (iv) | 46) (iv) | 47) (ii) | 48) (ii) |
| 49) (i) | 50) (i) | 51) (iii) | 52) (iii) | 53) (iv) | 54) (v) |
| 55) (i) | 56) (iii) | 57) (ii) | 58) (i) | 59) (ii) | |