

JNANAPEETA DCET ACADEMY

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2. STRAIGHT LINE

1. What is the equation of a straight line in slope-intercept form?

a) $y = mx + b$

b) $x = my + b$

c) $y = mx - b$

d) $x = my - b$

Answer: a) $y = mx + b$

2. What does the slope of a line represent?

a) The y-intercept of the line

b) The x-intercept of the line

c) The rate of change of y with respect to x

d) The rate of change of x with respect to y

Answer: c) The rate of change of y with respect to x

3. What is the slope of a horizontal line?

a) 0

b) 1

c) Infinity

d) Undefined

Answer: a) 0

4. What is the slope of a vertical line?

a) 0

b) 1

c) Infinity

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Page 1

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LETS DREAM IT.

JNANAPEETA DCET ACADEMY

d) Undefined

Answer: c) Infinity

5. What is the slope of a line parallel to the x-axis?

a) 0

b) 1

c) Infinity

d) Undefined

Answer: a) 0

6. What is the slope of a line perpendicular to the x-axis?

a) 0

b) 1

c) Infinity

d) Undefined

Answer: c) Infinity

7. What is the formula to find the slope of a line passing through two points (x_1, y_1) and (x_2, y_2) ?

a) $(y_2 - y_1) / (x_2 - x_1)$

b) $(x_2 - x_1) / (y_2 - y_1)$

c) $(y_1 - y_2) / (x_1 - x_2)$

d) $(x_1 - x_2) / (y_1 - y_2)$

Answer: a) $(y_2 - y_1) / (x_2 - x_1)$

8. What is the equation of a line with slope m and y-intercept b ?

a) $y = mx - b$

b) $y = mx + b$

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Page 2

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LETS DREAM IT.

JNANAPEETA DCET ACADEMY

c) $x = my - b$

d) $x = my + b$

Answer: b) $y = mx + b$

9. What is the slope-intercept form of the equation $x + 2y - 3 = 0$?

a) $y = -x/2 + 3/2$

b) $y = -x/2 - 3/2$

c) $y = -2x + 3$

d) $y = -2x - 3$

Answer: a) $y = -x/2 + 3/2$

10. What is the slope-intercept form of the equation $3x - 4y + 8 = 0$?

a) $y = 3/4x + 2$

b) $y = 3/4x - 2$

c) $y = -3/4x + 2$

d) $y = -3/4x - 2$

Answer: c) $y = -3/4x + 2$

11. What is the equation of a line perpendicular to $y = 2x + 3$ and passing through the point (1, -2)?

a) $y = 2x - 5$

b) $y = -2x + 1$

c) $y = -2x - 5$

d) $y = -2x - 1$

Answer: b) $y = -2x + 1$

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12. What is the equation of a line parallel to $y = 3x - 2$ and passing through the point $(4, 5)$?

a) $y = 3x + 7$

b) $y = 3x - 7$

c) $y = -3x + 7$

d) $y = -3x - 7$

Answer: b) $y = 3x - 7$

13. What is the slope-intercept form of the equation $2x - 5y = 10$?

a) $y = 2x + 10$

b) $y = 2x - 10$

c) $y = -2x + 10$

d) $y = -2x - 10$

Answer: a) $y = 2x - 10$

14. What is the x-intercept of the line represented by the equation $y = -3x + 6$?

a) -2

b) 2

c) -6

d) 6

Answer: b) 2

15. What is the y-intercept of the line represented by the equation $4x + 2y = 8$?

a) -2

b) 2

c) -4

d) 4

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Page 4

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LETS DREAM IT.

JNANAPEETA DCET ACADEMY

Answer: a) -2

16. What is the slope of the line represented by the equation $5x + 3y = 15$?

a) $-5/3$

b) $5/3$

c) $-3/5$

d) $3/5$

Answer: c) $-3/5$

17. What is the equation of a line with an undefined slope passing through the point $(-2, 4)$?

a) $x = -2$

b) $y = -2$

c) $x = 4$

d) $y = 4$

Answer: a) $x = -2$

18. What is the equation of a line with a slope of 0 passing through the point $(3, -1)$?

a) $x = 3$

b) $y = 3$

c) $x = -1$

d) $y = -1$

Answer: d) $y = -1$

19. What is the slope of a line represented by the equation $2y = 3x - 6$?

a) $-3/2$

b) $3/2$

c) $-2/3$

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Page 5

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LETS DREAM IT.

JNANAPEETA DCET ACADEMY

d) $\frac{2}{3}$

Answer: b) $\frac{3}{2}$

20. What is the equation of a line passing through the points (2, 3) and (4, 7)?

a) $y = 2x - 1$

b) $y = 2x + 1$

c) $y = x + 1$

d) $y = x - 1$

Answer: b) $y = 2x + 1$

21. What is the condition for two lines to be parallel?

a) Their slopes are equal

b) Their y-intercepts are equal

c) Their slopes are negative reciprocals

d) Their slopes are perpendicular

Answer: a) Their slopes are equal

22. What is the condition for two lines to be perpendicular?

a) Their slopes are equal

b) Their y-intercepts are equal

c) Their slopes are negative reciprocals

d) Their slopes are parallel

Answer: c) Their slopes are negative reciprocals

23. What is the formula to find the angle between two lines with slopes m_1 and m_2 ?

a) $\tan \theta = (m_1 - m_2) / (1 + m_1 m_2)$

b) $\tan \theta = (m_1 + m_2) / (1 - m_1 m_2)$

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Page 6

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LETS DREAM IT.

JNANAPEETA DCET ACADEMY

c) $\tan \theta = (m_1 - m_2) / (1 - m_1 m_2)$

d) $\tan \theta = (m_1 + m_2) / (1 + m_1 m_2)$

Answer: a) $\tan \theta = (m_1 - m_2) / (1 + m_1 m_2)$

24. If the angle between two lines is 90 degrees, what can we say about their slopes?

- a) Their slopes are equal
- b) Their slopes are negative reciprocals
- c) Their slopes are parallel
- d) Their slopes are undefined

Answer: b) Their slopes are negative reciprocals

25. What is the slope-intercept form of the equation of a straight line?

- a) $y = mx + b$
- b) $x = my + b$
- c) $y = mx - b$
- d) $x = my - b$

Answer: a) $y = mx + b$

26. What does the slope represent in the slope-intercept form of a straight line?

- a) The y-intercept of the line
- b) The x-intercept of the line
- c) The rate of change of y with respect to x
- d) The rate of change of x with respect to y

Answer: c) The rate of change of y with respect to x

27. What is the slope of a line represented by the equation $y = 2x + 3$?

- a) 2

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Page 7

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LETS DREAM IT.

JNANAPEETA DCET ACADEMY

b) -2

c) 3

d) -3

Answer: a) 2

28. What is the y-intercept of a line represented by the equation $y = 2x + 3$?

a) 2

b) -2

c) 3

d) -3

Answer: c) 3

29. What is the slope-point form of the equation of a straight line passing through the point (x_1, y_1) with slope m ?

a) $y - y_1 = m(x - x_1)$

b) $y - y_1 = m(x + x_1)$

c) $y + y_1 = m(x - x_1)$

d) $y + y_1 = m(x + x_1)$

Answer: a) $y - y_1 = m(x - x_1)$

30. What is the equation of a line passing through the point $(2, -1)$ with a slope of 3?

a) $y + 1 = 3(x - 2)$

b) $y - 1 = 3(x + 2)$

c) $y - 1 = 3(x - 2)$

d) $y + 1 = 3(x + 2)$

Answer: c) $y - 1 = 3(x - 2)$

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31. What is the equation of a line passing through the point $(-3, 4)$ with a slope of -2 ?

a) $y + 4 = -2(x - 3)$

b) $y - 4 = -2(x + 3)$

c) $y - 4 = -2(x - 3)$

d) $y + 4 = -2(x + 3)$

Answer: c) $y - 4 = -2(x - 3)$

32. What is the slope-intercept form of the equation $2x - 3y = 6$?

a) $y = 2x + 6$

b) $y = 2x - 6$

c) $y = -2x + 6$

d) $y = -2x - 6$

Answer: c) $y = -2x + 6$

33. What is the slope-intercept form of the equation $-4x + 2y = 8$?

a) $y = 2x + 8$

b) $y = 2x - 8$

c) $y = -2x + 8$

d) $y = -2x - 8$

Answer: a) $y = 2x + 8$

34. What is the slope of a line parallel to the line $3x + 2y = 6$?

a) $-3/2$

b) $3/2$

c) $-2/3$

d) $2/3$

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Page 9

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JNANAPEETA DCET ACADEMY

LETS DREAM IT.

JNANAPEETA DCET ACADEMY

Answer: b) $3/2$

35. What is the slope of a line perpendicular to the line $2x - 5y = 10$?

a) $-5/2$

b) $5/2$

c) $-2/5$

d) $2/5$

Answer: c) $-2/5$

36. What is the equation of a line parallel to $y = 4x + 2$ and passing through the point $(1, 3)$?

a) $y = 4x + 5$

b) $y = 4x - 1$

c) $y = 3x + 2$

d) $y = 3x - 1$

Answer: b) $y = 4x - 1$

37. What is the equation of a line perpendicular to $y = -2x + 4$ and passing through the point $(2, 5)$?

a) $y = 2x + 1$

b) $y = 2x - 1$

c) $y = -1/2x + 3$

d) $y = -1/2x + 1$

Answer: d) $y = -1/2x + 1$

38. What is the angle between the lines with slopes $1/2$ and -2 ?

a) 60 degrees

b) 45 degrees

c) 30 degrees

CONTACT FOR DCET CLASSES 9108814633

Page 10

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JNANAPEETA DCET ACADEMY

LETS DREAM IT.

JNANAPEETA DCET ACADEMY

d) 90 degrees

Answer: a) 60 degrees

39. What is the angle between the lines with slopes $-1/3$ and 3 ?

a) 45 degrees

b) 60 degrees

c) 30 degrees

d) 90 degrees

Answer: d) 90 degrees

40. What is the slope of a line perpendicular to $x = 5$?

a) 0

b) 1

c) Undefined

d) Infinity

Answer: c) Undefined

41. What is the slope of a line parallel to $y = -3$?

a) 0

b) 1

c) Undefined

d) Infinity

Answer: a) 0

42. What is the slope-point form of the equation for a line passing through the point $(2, 3)$ and parallel to the line $y = 2x + 1$?

a) $y - 3 = 2(x - 2)$

b) $y - 3 = -2(x - 2)$

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Page 11

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JNANAPEETA DCET ACADEMY

LETS DREAM IT.

JNANAPEETA DCET ACADEMY

c) $y + 3 = 2(x - 2)$

d) $y + 3 = -2(x - 2)$

Answer: a) $y - 3 = 2(x - 2)$

43. What is the slope-point form of the equation for a line passing through the point $(-1, 4)$ and perpendicular to the line $3x + 2y = 8$?

a) $y - 4 = -2(x + 1)$

b) $y - 4 = 2(x + 1)$

c) $y + 4 = -2(x + 1)$

d) $y + 4 = 2(x + 1)$

Answer: a) $y - 4 = -2(x + 1)$

44. What is the equation of a line with a slope of -3 passing through the point $(4, -2)$?

a) $y = -3x + 10$

b) $y = -3x - 10$

c) $y = 3x + 10$

d) $y = 3x - 10$

Answer: b) $y = -3x - 10$

45. What is the equation of a line with a slope of $1/2$ and y-intercept of -3 ?

a) $y = 1/2x - 3$

b) $y = 1/2x + 3$

c) $y = -1/2x - 3$

d) $y = -1/2x + 3$

Answer: b) $y = 1/2x + 3$

46. What is the x-intercept of the line represented by the equation $y = -2x + 6$?

a) 2

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Page 12

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JNANAPEETA DCET ACADEMY

LETS DREAM IT.

JNANAPEETA DCET ACADEMY

b) -2

c) 6

d) -6

Answer: c) 6

47. What is the y-intercept of the line represented by the equation $-4x + 3y = 9$?

a) -3

b) 3

c) -9

d) 9

Answer: b) 3

48. What is the slope of a line represented by the equation $2y = 4x - 8$?

a) 2

b) -2

c) 4

d) -4

Answer: a) 2

49. What is the equation of a line with an undefined slope passing through the point (5, -1)?

a) $x = 5$

b) $y = 5$

c) $x = -1$

d) $y = -1$

Answer: d) $y = -1$

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50. What is the equation of a line with a slope of 0 passing through the point (3, 2)?

a) $y = 0$

b) $x = 0$

c) $y = 2$

d) $x = 3$

Answer: c) $y = 2$

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