

**Parallel and Perpendicular Line**

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**Find the slope of the line through each pair of points.**

1)  $(-9, -4), (-9, -5)$

2)  $(3, -17), (8, 9)$

3)  $(7, 4), (17, -14)$

4)  $(19, 16), (-15, 3)$

**Find the slope of a line parallel to each given line.**

5)  $y = -x - 4$

6)  $x = -3$

7)  $y = -3$

8)  $y = -x - 2$

9)  $y = 6x - 3$

10)  $y = \frac{2}{3}x$

11)  $y = -x$

12)  $y = \frac{2}{3}x - 5$

13)  $3x - 2y = -2$

14)  $4x + y = 2$

15)  $x + y = 1$

16)  $x + 5y = 10$

**Find the slope of a line perpendicular to each given line.**

17)  $y = -\frac{5}{3}x - 5$

18)  $y = -\frac{8}{3}x + 5$

19)  $y = -\frac{1}{2}x + 4$

20)  $y = \frac{3}{5}x + 4$

21)  $y = 6x - 3$

22)  $y = -x - 4$

23)  $y = -\frac{5}{3}x + 5$

24)  $y = -x - 2$

25)  $4x + 3y = 3$

26)  $x + y = -1$

27)  $x - y = 1$

28)  $3x - 5y = 10$

**Write the equation of the line parallel to the given line in slope-intercept form.**

29) through:  $(5, 2)$ , parallel to  $y = \frac{1}{5}x + 4$

30) through:  $(1, -3)$ , parallel to  $y = -5x + 5$

31) through:  $(-1, 4)$ , parallel to  $y = -2x + 4$

32) through:  $(-5, 1)$ , parallel to  $y = \frac{2}{5}x + 4$

**Write the equation of the line perpendicular to the given line in slope-intercept form.**

33) through:  $(1, 3)$ , perp. to  $y = \frac{1}{2}x + 4$

34) through:  $(5, -4)$ , perp. to  $y = -5x + 3$

35) through:  $(3, 4)$ , perp. to  $x = 0$

36) through:  $(3, -5)$ , perp. to  $y = 2$

**Write the slope-intercept form of the equation of the line described.**

37) through:  $(-4, -5)$ , parallel to  $y = \frac{1}{2}x + 3$

38) through:  $(4, -2)$ , parallel to  $y = 3$

A)  $y = \frac{1}{2}x - 3$

B)  $y = -2x - 3$

A)  $x = 2$

B)  $x = 1$

C)  $y = -\frac{5}{2}x - 3$

D)  $y = -\frac{1}{2}x - 3$

C)  $y = -2x$

D)  $y = -2$

39) through:  $(2, 2)$ , parallel to  $y = 3x + 3$

40) through:  $(-1, -1)$ , parallel to  $y = -3x + 4$

A)  $y = -5x - 4$

B)  $y = 3x - 4$

A)  $y = 2x - 4$

B)  $y = -4x - 4$

C)  $y = 5x - 4$

D)  $y = -4x + 5$

C)  $y = -4x + 2$

D)  $y = -3x - 4$

41) through:  $(-5, 1)$ , perp. to  $y = 5x + 2$

42) through:  $(2, -3)$ , perp. to  $y = \frac{1}{2}x + 2$

A)  $y = x$

B)  $y = -\frac{1}{5}x$

A)  $y = -2x + 1$

B)  $y = -4x + 1$

C)  $y = 4x$

D)  $y = -4x$

C)  $y = x - 4$

D)  $y = 4x + 1$

43) through:  $(1, -2)$ , perp. to  $y = x + 3$

44) through:  $(-3, 5)$ , perp. to  $y = \frac{1}{2}x + 3$

A)  $y = -5x - 1$

B)  $y = -4x - 1$

A)  $y = -2x - 1$

B)  $y = -2x - 4$

C)  $y = 5x - 1$

D)  $y = -x - 1$

C)  $y = -4x - 2$

D)  $y = -x - 2$

## Answers to Parallel and Perpendicular Line (ID: 1)

1) Undefined

2)  $\frac{26}{5}$

3)  $-\frac{9}{5}$

4)  $\frac{13}{34}$

5) -1

6) Undefined

7) 0

8) -1

9) 6

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

11) -1

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

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

14) -4

15) -1

16)  $-\frac{1}{5}$

17)  $\frac{3}{5}$

18)  $\frac{3}{8}$

19) 2

20)  $-\frac{5}{3}$

21)  $-\frac{1}{6}$

22) 1

23)  $\frac{3}{5}$

24) 1

25)  $\frac{3}{4}$

26) 1

27) -1

28)  $-\frac{5}{3}$

29)  $y = \frac{1}{5}x + 1$

30)  $y = -5x + 2$

31)  $y = -2x + 2$

32)  $y = \frac{2}{5}x + 3$

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

34)  $y + 4 = \frac{1}{5}(x - 5)$

35)  $y - 4 = 0$

36)  $0 = x - 3$

37) A

38) D

39) B

40) D

41) B

42) A

43) D

44) A