

3.2 ~ Parallel & Perpendicular Lines

Past due on _____ Period _____

ALL WORK MUST BE SHOWN FOR ALL PROBLEMS.

\overline{AB} contains points A and B . \overline{CD} contains points C and D . Find the slope of each line. Are \overline{AB} and \overline{CD} parallel, perpendicular, or neither?

1) $A(-8, 3), B(-4, 11), C(-1, 13), D(1, 2)$

2) $A(3, 5), B(2, -1), C(7, -2), D(10, 16)$

3) $A(-5, 1), B(1, 3), C(-4, -2), D(4, 2)$

4) $A(-3, 4), B(1, -2), C(-4, 0), D(2, 4)$

Rewrite each equation in slope-intercept form, if necessary. Identify the slope of each line. Are the lines parallel, perpendicular, or neither?

5) $y = 3x + 2$
 $y = -3x + 5$

6) $x + 2y = -6$
 $-2x + y = 2$

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

8) $y = -\frac{1}{3}x + 5$
 $2x + 6y = 12$

9) $3x + 4y = 12$
 $2y + 6x = 6$

10) $x + 2y = 6$
 $6y = -12 - 3x$

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

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

12) through: $(3, 1)$, perp. to $y = 4x - 3$

13) through: $(-5, -4)$, perp. to $y = -\frac{5}{6}x - 1$

14) through: $(-3, 5)$, parallel to $y = -\frac{8}{3}x - 4$

15) through: $(-4, 3)$, parallel to $8x + 7y = 7$

16) through: $(4, -1)$, perp. to $5x - 3y = 6$

Find the value of k .

17) Find the value of k such that the line containing point $(2, k)$ is perpendicular to the line $y = 2x - 3$ at point $(4, 5)$.

18) Find the value of k if the line through the points $(-3, k)$ and $(3, 0)$ is parallel to the line through the points $(-4, 1)$ and $(2, 5)$.

19) Find the value of k if the line through the points $(2k + 1, -4)$ and $(5, 3 - k)$ is parallel to the line through the points $(-4, -9)$ and $(2, -3)$.