LESSON 3.7

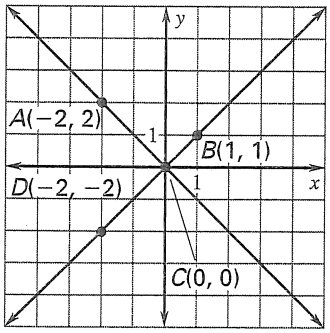
NAME _____ DATE _____

Practice C

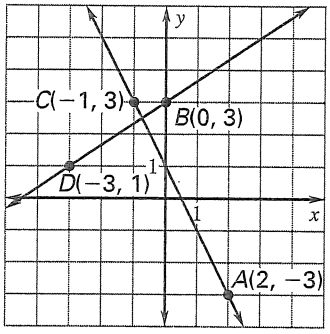
For use with pages 172–178

Find the slope of $\overleftrightarrow{AC}$ and $\overleftrightarrow{BD}$. Decide whether $\overleftrightarrow{AC}$ is perpendicular to $\overleftrightarrow{BD}$.

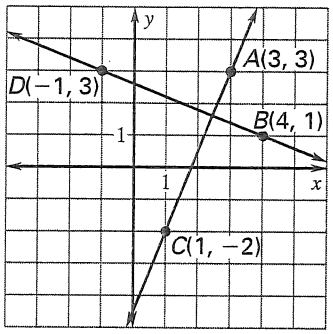
1.



2.



3.



Decide whether lines p_1 and p_2 are perpendicular.

4. line p_1: $y = 3x + 5$
   line p_2: $y = \frac{1}{3}x + 5$
5. line p_1: $7x + 2y = 5$
   line p_2: $2x - 7y = 5$
6. line p_1: $9x = 4 + 7y$
   line p_2: $7x + 9y = -5$
7. line p_1: $x + 3y = -4$
   line p_2: $6x - 2y = 8$

Determine if the intersection of $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ forms a right angle. Explain your reasoning.

8. $A(-7, 0), B(-2, -1), C(-3, 6), D(-4, -3)$
9. $A(5, 8), B(1, 6), C(1, -3), D(-3, 5)$
10. $A(-4, 4), B(4, 3), C(-2, -4), D(-1, 4)$
11. $A(1, 2), B(-2, -6), C(-1, 5), D(5, 2)$

Line *j* is perpendicular to the line with the given equation and line *j* passes through *P*. Write an equation of line *j*.

12. $y = \frac{1}{6}x + 5, P(-3, 1)$
13. $y = 0.1x + 7, P(1, 2)$
14. $y = -\frac{5}{2}x + 1, P(-5, 6)$
15. $y = \frac{2}{3}x + 4, P(6, -2)$

Decide whether the lines with the given equations are parallel, perpendicular, or neither.

16. $y = -5x - 2$
    $y = 5x + 2$
17. $y = \frac{1}{3}x - 1$
    $y = -3x + 2$
18. $2x - 4y = 3$
    $4x - 8y = 7$
19. $2x - 5y = 8$
    $5x - 2y = 2$
20. $y = \frac{5}{6}x + 8$
    $y = -\frac{6}{5}x - 4$
21. $x - 2y = 12$
    $3x - 6y = 10$