LESSON 3.7

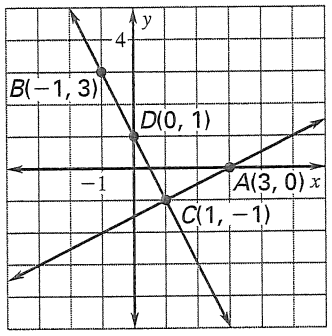
NAME _____ DATE _____

Practice B

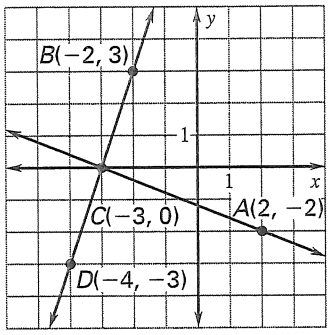
For use with pages 172–178

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

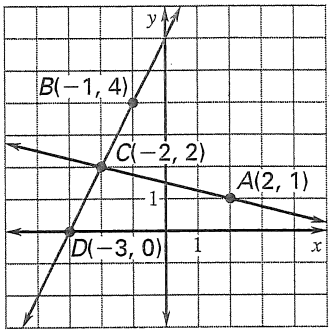
1.



2.



3.



The slopes of two lines are given. Are the lines perpendicular?

4. $m_1 = 3, m_2 = \frac{1}{3}$
5. $m_1 = -\frac{4}{3}, m_2 = \frac{4}{3}$
6. $m_1 = -2, m_2 = \frac{1}{2}$
7. $m_1 = -\frac{2}{5}, m_2 = \frac{5}{2}$
8. $m_1 = 3\frac{1}{2}, m_2 = -\frac{2}{7}$
9. $m_1 = 3, m_2 = -3$

Decide whether lines p_1 and p_2 are perpendicular.

10. line p_1: $y = 2x + 5$
    line p_2: $y = \frac{1}{2}x + 5$
11. line p_1: $6x + 8y = 12$
    line p_2: $6x - 8y = 18$
12. line p_1: $9x - 7y = 6$
    line p_2: $7x + 9y = -5$
13. line p_1: $x + 2y = -4$
    line p_2: $6x - 3y = 8$

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

14. $A(-9, 2), B(0, 1), C(-1, 8), D(-2, -1)$
15. $A(3, 6), B(-1, 4), C(4, 0), D(0, 8)$
16. $A(-5, 3), B(3, 2), C(0, -2), D(1, 6)$
17. $A(4, 5), B(1, -3), C(-2, 4), D(4, 1)$

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

18. $y = \frac{1}{3}x + 5, P(6, 2)$
19. $y = -4x + 7, P(1, 2)$
20. $y = -\frac{5}{6}x + 4, P(10, 12)$
21. $y = \frac{2}{7}x + 4, P(2, 3)$

Write an equation parallel to the given line. Write an equation perpendicular to the given line.

22. $y = -5x$
23. $y = \frac{1}{3}x - 1$
24. $2x - 4y = 3$

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