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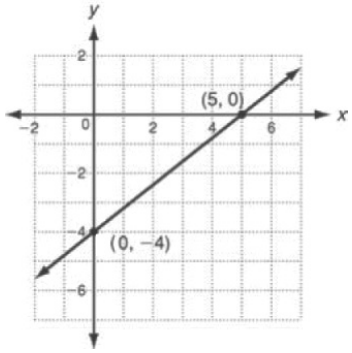
LESSON 4-5

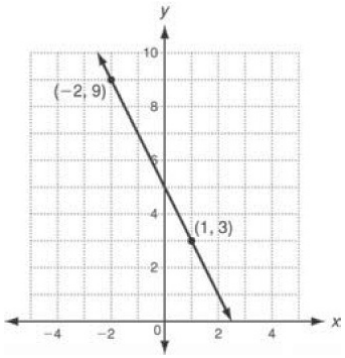
Equations of Parallel and Perpendicular Lines

Practice and Problem Solving: A/B

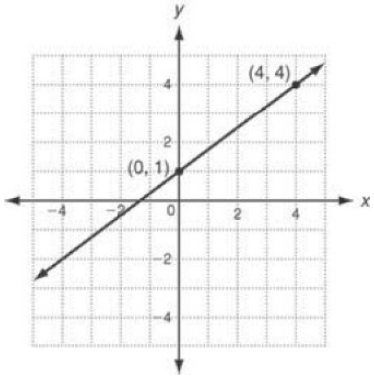
Ffind the slope of the line.

1. 

slope = _____

2. 

slope = _____

3. 

slope = _____

Find the slope of the line that is between the two given points.

4. $A(8,0), B(3,-2)$

5. $A(-2,-4), B(6,1)$

6. $A(1,6), B(-2,-3)$

7. $A(-3,2), B(5,-4)$

For Problems 8-15, write an equation of the line parallel to the given line through the given point.

8. $y = 9x + 4$
through (2, 7)

9. $y = 4x - 6$
through (6, –3)

10. $y = \frac{2}{3}x + 6$
through (–3, 6)

11. $y = -\frac{1}{4}x - 12$
through (12, 10)

12. $(0,-1), y = -2x + 3$

13. $(3,8), y = \frac{1}{5}(x + 4)$

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14. $(-2,6), x = -5$

15. $(4,0), -x + 2y = 12$

For Problems 16-23, write an equation of the line perpendicular to the given line through the given point.

16. $y = \frac{1}{4}x + 3$
through (4, 1)

17. $y = -\frac{1}{3}x - 6$
through (–2, 8)

18. perpendicular to $y = -6x - 9$
through (6, 10)

19. perpendicular to $y = 5x + 14$
through (5, –3)

20. (0, 0), y = -9x - 1

21. (4, -6), y = -3

22. (2, 3), y - 4 = -2(x + 3)

23. (-8, 0), 3x - 5y = 6

24. A triangle has vertices *L*(0, 6), *M*(5, 8), and *N*(4, –1). Is the triangle a right triangle? Explain your reasoning.

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Find a value for *k* based on the given description.

30. The line through $(-1, k)$ and $(-7, -2)$ is parallel to the line $y = x + 1$.

31. The line through $(k, 2)$ and $(7, 0)$ is perpendicular to the line $y = x - \frac{28}{5}$