4.2 Practice WITH CalcChat® AND CalcView®

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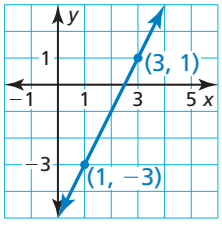
In Exercises 1–8, write an equation in point-slope form of the line that passes through the given point and has the given slope. *Example 1*

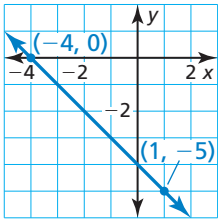
1. $(2, 1)$; $m = 2$
2. $(3, 5)$; $m = -1$
3. $(7, -4)$; $m = -6$
4. $(-8, -2)$; $m = 5$
5. $\left(\frac{5}{6}, 0\right)$; $m = -3$
6. $\left(0, -\frac{1}{2}\right)$; $m = \frac{3}{4}$
7. $(5, -12)$; $m = -\frac{2}{5}$
8. $(-6, 8.2)$; $m = 1.5$

In Exercises 9–12, write an equation in slope-intercept form of the line shown. *Example 2*

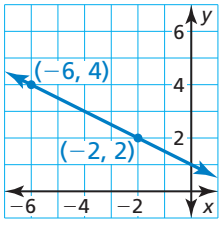
9.



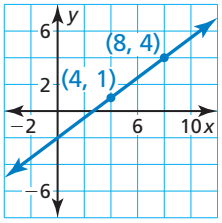
10.



11.



12.



In Exercises 13–18, write an equation in slope-intercept form of the line that passes through the given points.

13. $(7, 2)$, $(2, 12)$
14. $(6, -2)$, $(12, 1)$
15. $(1, -9)$, $(-3, -9)$
16. $(-5, 19)$, $(5, 13)$
17. $(6, 11)$, $\left(2, \frac{25}{3}\right)$
18. $(2, -3)$, $\left(-\frac{1}{2}, \frac{1}{8}\right)$

In Exercises 19–24, write a linear function f with the given values. *Example 3*

19. $f(2) = -2, f(1) = 1$
20. $f(5) = 7, f(-2) = 0$
21. $f(-4) = 2, f(6) = -3$
22. $f(-10) = 4.5, f(-2) = 4.5$
23. $f(-3) = 1, f(13) = 5$
24. $f(-9) = 10, f(-1) = -2$

In Exercises 25 and 26, tell whether the data in the table can be modeled by a linear equation. Explain. If possible, write a linear equation that represents y as a function of x.

25.

x	2	4	6	8	10
y	−1	5	15	29	47

26.

x	0	1	2	4	5
y	1.2	1.4	1.6	2	2.2

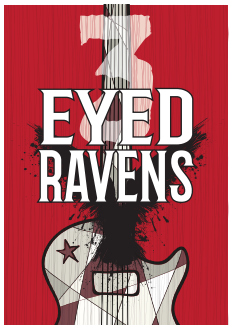
27. **MODELING REAL LIFE** A homeowner charges a processing fee and a daily fee to rent a house. The table shows the total costs of renting the house for different numbers of days. *Example 4*

Days	2	4	6	8
Total cost (dollars)	258	467	676	885

   a. Can the situation be modeled by a linear equation? Explain.
   b. What is the processing fee? the daily fee?
   c. A guest can spend no more than $1200 on the house rental. What is the maximum number of days the guest can rent the house?

28. **MODELING REAL LIFE** You want to order posters to advertise your band. A company charges $109.95 for the first 100 posters and $65 for each additional 100 posters.

   a. Write an equation that represents the total cost (in dollars) of the posters as a function of the number (in hundreds) of posters ordered.
   b. Find the total cost of 1000 posters.



29. **ERROR ANALYSIS** Describe and correct the error in writing an equation of the line that passes through the points $(1, 2)$ and $(4, 3)$.

✗ $m = \frac{3-2}{4-1} = \frac{1}{3}$ $\quad y - 2 = \frac{1}{3}(x - 4)$