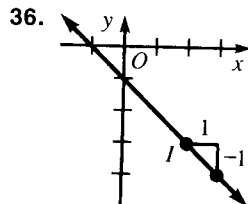
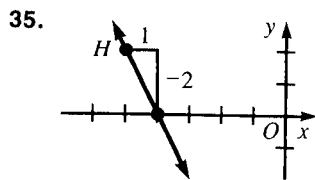
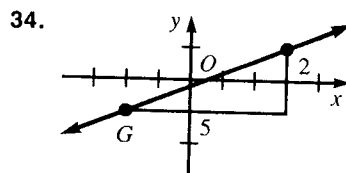
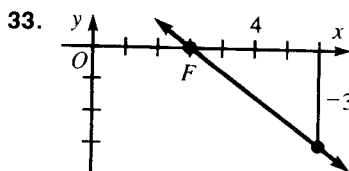
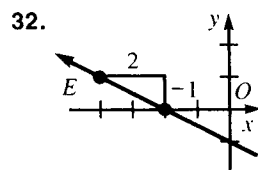
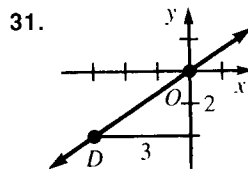
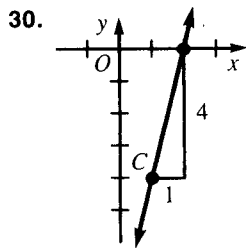
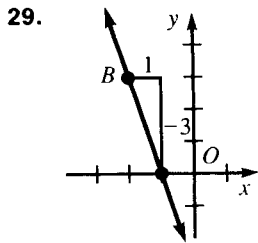
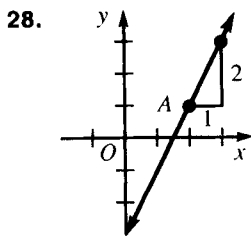


8-3 Slope of a Line



Find the slope of the line through the given points.

- | | | |
|-------------------------------------|-----------------------------------|------------------------------------|
| 1. (5, -6), (2, -4) $-\frac{2}{3}$ | 2. (-3, 6), (-5, 4) 1 | 3. (0, 1), (2, -2) $-\frac{3}{2}$ |
| 4. (1, 2), (4, 6) $\frac{4}{3}$ | 5. (2, 1), (8, -2) $-\frac{1}{2}$ | 6. (-1, 5), (0, 0) -5 |
| 7. (4, 3), (2, 7) -2 | 8. (5, 2), (-1, 2) 0 | 9. (-3, -4), (1, 2) $\frac{3}{2}$ |
| 10. (-5, 2), (7, -6) $-\frac{2}{3}$ | 11. (1, 4), (-3, 0) 1 | 12. (4, 4), (-4, 6) $-\frac{1}{4}$ |
| 13. (8, -1), (6, 0) $-\frac{1}{2}$ | 14. (3, -1), (-2, 4) -1 | 15. (7, 4), (7, -4) no slope |

8-3 Slope of a Line (continued)

Example 4 Find the slope of the line with the equation $2x + 3y = 6$.

Solution 1. First find any two points on the line.

$$\begin{aligned} \text{If } x = 0: \quad 2(0) + 3y = 6 & \quad \text{If } y = 0: \quad 2x + 3(0) = 6 \\ \quad \quad \quad 3y = 6 & \quad \quad \quad 2x = 6 \\ \quad \quad \quad y = 2 & \quad \quad \quad x = 3 \end{aligned}$$

One point: (0, 2) Another point: (3, 0)

2. Now use the slope formula. Slope = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{0 - 2}{3 - 0} = -\frac{2}{3}$

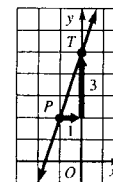
Find the slope of each line. If the line has no slope, say so.

- | | | | | | | | | | | | | | |
|------------------|-------------------|-------------|------------------|--------------------|-----------------|------------------|--------------------|-------------|----------|------------------|------------------|------------------|----------|
| 16. $y = 2x - 1$ | 20. $6x + 2y = 3$ | 24. $y = 5$ | 17. $y = 3x + 2$ | 21. $2x - 5y = 10$ | 25. $y + 2 = 0$ | 18. $y = 4 - 2x$ | 22. $3x + 6y = 12$ | 26. $x = 1$ | no slope | 19. $y = 6 - 3x$ | 23. $x - 2y = 4$ | 27. $2x - 3 = 0$ | no slope |
|------------------|-------------------|-------------|------------------|--------------------|-----------------|------------------|--------------------|-------------|----------|------------------|------------------|------------------|----------|

Example 5 Draw a line through the point $P(-1, 2)$ with a slope of 3.

Solution

- Plot point P .
- Write the slope as $\frac{3}{1}$. Rise = 3. Run = 1.
- From P , measure 1 unit to the right and 3 units up to locate a second point, T .
- Draw the line through P and T .



Graphs given at the back of

Through the given point, draw a line with the given slope. **this Answer Key.**

- | | | |
|---------------------------------------|---------------------------------------|--------------------------------------|
| 28. $A(2, 1)$; slope 2 | 29. $B(-2, 3)$; slope -3 | 30. $C(1, -4)$; slope 4 |
| 31. $D(-3, -2)$; slope $\frac{2}{3}$ | 32. $E(-4, 1)$; slope $-\frac{1}{2}$ | 33. $F(3, 0)$; slope $-\frac{3}{4}$ |
| 34. $G(-2, -1)$; slope $\frac{2}{5}$ | 35. $H(-5, 2)$; slope -2 | 36. $I(2, -3)$; slope -1 |

Mixed Review Exercises

Solve.

1. $\frac{x+2}{2} + \frac{x}{4} = 0$	2. $-3 = \frac{9b}{4} \left\{ -\frac{4}{3} \right\}$	3. $\frac{2+z}{3z} = \frac{4}{z} \{10\}$	4. $-3(y+2) = 9 \{ -5 \}$
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Evaluate if $x = -2$, $y = 1$, $a = 3$, and $b = -4$.

- | | | | |
|--------------------------------------|--------------|-----------------------------|------------------|
| 5. $\frac{a+2b}{2a-b} - \frac{1}{2}$ | 6. $3(x+3y)$ | 7. $\frac{1}{2}(3x+4y) - 1$ | 8. $(2a-3b) + 5$ |
|--------------------------------------|--------------|-----------------------------|------------------|