

Name:
Instructor:

Date:
Section:

Practice Set 3.5

Use the choices to fill in each blank.

perpendicular
parallel

point-slope
slope-intercept

point-intercept
horizontal

vertical
oblique

1. The equation $y - y_1 = m(x - x_1)$ is called the _____ form.
2. If two lines have the same slope they are _____.
3. If two lines have slopes that are negative reciprocals then they are _____.
4. A horizontal line is perpendicular to a(n) _____ line.

Write an equation in slope-intercept form for each line described.

- | | | |
|---|--|----------|
| 5. $m = 3$ through $(1, 2)$ | 6. $m = -2$ through $(1, 3)$ | 5. _____ |
| | | 6. _____ |
| 7. $m = -\frac{3}{4}$ through $(-4, 5)$ | 8. $m = \frac{1}{3}$ through $(3, -4)$ | 7. _____ |
| | | 8. _____ |

Two points on each line, l_1 and l_2 , are given. Determine if the lines are parallel, perpendicular, or neither.

- | | | |
|--|---|-----------|
| 9. $l_1: (1, 1)$ and $(2, 2)$
$l_2: (3, 5)$ and $(4, 6)$ | 10. $l_1: (-2, 4)$ and $(-3, -1)$
$l_2: (3, -1)$ and $(2, -4)$ | 9. _____ |
| | | 10. _____ |
| 11. $l_1: (8, 1)$ and $(5, 6)$
$l_2: (4, 2)$ and $(1, 7)$ | 12. $l_1: (3, -5)$ and $(5, -2)$
$l_2: (4, 3)$ and $(1, 5)$ | 11. _____ |
| | | 12. _____ |

Determine whether the two equations represent lines that are parallel, perpendicular, or neither.

- | | | |
|---|--|-----------|
| 13. $y = 3x + 5$
$y = -\frac{1}{3}x - 2$ | 14. $4x + 3y = 5$
$y = -\frac{4}{3}x + 7$ | 13. _____ |
| | | 14. _____ |
| 15. $2x - y = 5$
$x + 2y = 7$ | 16. $x = 2y + 6$
$y = 3x - 5$ | 15. _____ |
| | | 16. _____ |

Practice Set 3.5

Write an equation in slope-intercept form for each line described.

17. Through (5, 3) and parallel to the graph of $y = 3x - 1$ 17. _____
18. Through (-2, 3) and perpendicular to the graph of $2x + 3y = 5$ 18. _____
19. With x -intercept (-4, 0) and y -intercept (0, -3) 19. _____
20. Through (-7, 5) and perpendicular to the line with x -intercept (1, 0) and y -intercept (0, 7) 20. _____
21. Through (4, 3) and parallel to the line through the (0, 1) and (2, -3) 21. _____
22. Through the point (2, 3) and parallel to the x -axis 22. _____

Problem Solving

23. The number of homeschooled U.S. children is on the rise. The dashed line is a linear function drawn to approximate the data. 23. a) _____
- a) Write an equation in slope-intercept form of the dashed line. b) _____
- b) Use the equation from part a) to estimate the number of homeschoolers in 2010.

Year	Number of US Homeschooled Children
1994	356,000
1996	636,000
1999	791,000

[Source: U.S. Census Bureau]

