

Name _____ Date _____

Parking Lot Design Parallel and Perpendicular Lines in the Coordinate Plane

Vocabulary

Write the term from the box that best completes each statement.

| | | | |
|----------------------|-------------|------------------|---------------|
| negative reciprocals | slope | point-slope form | vertical line |
| perpendicular lines | y-intercept | horizontal line | |
| slope-intercept form | reciprocals | parallel lines | |

- Two numbers are _____ if their product is -1 .
- The _____ of a nonvertical line is the ratio of the vertical change to the horizontal change.
- The _____ of a linear equation that passes through the point (x_1, y_1) and has slope m is $y - y_1 = m(x - x_1)$.
- Two lines in the same plane are _____ if they intersect at right angles.
- The _____ is the point at which a line intersects the y -axis.
- A(n) _____ has an equation of the form $y = a$ where a is any real number.
- The _____ of a linear equation is $y = mx + b$, where m is the slope of the line and b is the y -intercept of the line.
- Two non-zero numbers are _____ if their product is 1 .
- A(n) _____ has an equation of the form $x = b$ where b is any real number.
- Two lines in the same plane are _____ if they do not intersect.

Problem Set

Determine whether the lines are parallel, perpendicular, or neither. Explain your answer.

11. line l : $y = -2x - 4$

line m : $y = -2x + 8$

12. line p : $y = 3x + 5$

line q : $y = \frac{1}{3}x + 5$

13. line r : $y = -5x + 12$

line s : $y = \frac{1}{5}x - 6$

14. line t : $y = 3x + 1$

line u : $y = 3x - 7$

15. line l : $y = 6x + 2$

line m : $y = -6x - 2$

16. line n : $y = x - 8$

line o : $y = -x + 1$