

P.I. G.G.63: Determine whether two lines are parallel, perpendicular, or neither, given their equations

1. Determine if the two lines $5x - 7y = -35$ and $y = \frac{7}{5}x + 3$ are *parallel, perpendicular, or neither*.
2. Determine if the two lines $3x + 2y = 6$ and $y = -\frac{3}{2}x - 2$ are *parallel, perpendicular, or neither*.
3. Determine if the two lines $7x + 5y = 35$ and $y = \frac{5}{7}x + 5$ are *parallel, perpendicular, or neither*.
4. Determine if the two lines $2x + 9y = 18$ and $y = -\frac{2}{9}x + 1$ are *parallel, perpendicular, or neither*.
5. Determine whether the graph of $-4y = -x + 5$ and $-16x - 4y = 9$ are perpendicular lines.
6. Determine whether the graph of $-y = 3x + 11$ and $-2x - 6y = 3$ are perpendicular lines.
7. Determine whether the graph of $3y = 4x + 14$ and $9x + 12y = 6$ are perpendicular lines.
8. Determine whether the graph of $-4y = x + 13$ and $-12x + 3y = 13$ are perpendicular lines.
9. Which of the lines is not perpendicular to $2x + y = 8$?

[A] $2y - x = 4$

[B] $x - 2y = 3$

[C] $2x - y = 4$

[D] $y - \frac{x}{2} = 6$

10. Compare the quantities in Column A and Column B.

Column A

Column B

the slope of a line parallel to

the slope of a line perpendicular to

the line with the equation $x - 2y = 1$

the line with equation $2x + y = -1$

[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The quantities are equal.

[D] The relationship cannot be determined from the information given.

- [1] The two lines are neither perpendicular nor parallel.
- [2] The two lines are parallel.
- [3] The two lines are perpendicular.
- [4] The two lines are parallel.
- [5] The lines are perpendicular.
- [6] The lines are not perpendicular.
- [7] The lines are perpendicular.
- [8] The lines are perpendicular.
- [9] C
- [10] C