

3.5 Slopes of parallel and perpendicular lines

Parallel, Perpendicular, or Neither??

Directions: Determine whether the lines given in each box are parallel, perpendicular, or neither. Color the boxes as follows:

Parallel Lines: Yellow

Perpendicular Lines: Light Blue

Neither: Uncolored

$y = 3x - 7$ $y = 3x + 1$	$y = -\frac{2}{5}x + 3$ $y = \frac{2}{5}x + 8$	$y = -\frac{1}{4}x$ $y = 4x - 5$
$2x + 7y = 28$ $7x - 2y = 4$	$y = -5x + 1$ $x - 5y = 30$	$3x + 2y = 8$ $2x + 3y = -12$
$y = -4x - 1$ $8x + 2y = 14$	$x + y = 7$ $x - y = 9$	$y = \frac{1}{3}x + 9$ $x - 3y = 3$
$4x + 9y = 18$ $y = 4x + 9$	$5x - 10y = 20$ $y = -2x + 6$	$-9x + 12y = 24$ $y = \frac{3}{4}x - 5$
$y = x - 3$ $x - y = 8$	$10x + 8y = 16$ $5y = 4x - 15$	$y = \frac{5}{3}x + 7$ $6x - 10y = 10$
$x - 2y = 18$ $2x + y = 6$	$x = 4$ $x = -6$	$x = 1$ $y = -8$

For questions 17-20, determine whether \overleftrightarrow{QR} and \overleftrightarrow{ST} are parallel, perpendicular, or neither.

17. $Q(9, 10), R(-5, 2), S(-8, -2), T(-1, 2)$

- Parallel
 Perpendicular
 Neither

18. $Q(-8, 7), R(-7, 2), S(-8, 13), T(-11, -2)$

- Parallel
 Perpendicular
 Neither

19. $Q(-6, 11), R(2, -1), S(-4, 8), T(-1, 10)$

- Parallel
 Perpendicular
 Neither

20. $Q(-1, 4), R(-1, -9), S(11, -2), T(11, 6)$

- Parallel
 Perpendicular
 Neither

21. Which line is **parallel** to the line given below

$$y = -\frac{5}{2}x - 7$$

- A. $2x + 5y = -5$
 B. $2x - 5y = 30$
 C. $5x + 2y = 4$
 D. $5x - 2y = 8$

22. Which line is **parallel** to the line given below?

$$x - 3y = 24$$

- A. $y = 3x + 8$
 B. $y = -3x - 1$
 C. $y = \frac{1}{3}x + 3$
 D. $y = -\frac{1}{3}x - 4$

23. Which of the following lines is **perpendicular** to the equation given below?

$$y = -2x + 8$$

- A. $x + 2y = 8$
 B. $x - 2y = 6$
 C. $2x + y = 4$
 D. $2x - y = 1$

24. Which pair of lines are **perpendicular**?

- A. $x - y = 7$ and $y = x + 3$
 B. $y = -4x + 1$ and $8x + 2y = -10$
 C. $y = -8$ and $y = 2$
 D. $x = 4$ and $y = -1$