

# Equations of Parallel and Perpendicular Lines

Find the equation of parallel and perpendicular lines to the given one that passes through the given point (in the slope - intercept form).

a  $2x + 3y = 7; (-1, 5)$

b  $\frac{7y}{5} - 2x = 3; (-1, 3)$

Parallel:

Parallel:

Perpendicular:

Perpendicular:

c  $y - 2 + x = 4; (0, 2)$

d  $y + 1 = \frac{-5x}{2}; (-3, 4)$

Parallel:  $y = -x + 2$

Parallel:

Perpendicular:

Perpendicular:

e  $y = 17 + \frac{x}{4}; (6, 7)$

f  $y = 7 + 6x; (-1, 5)$

Parallel:

Parallel:

Perpendicular:

Perpendicular:

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## Answers

a  $2x + 3y = 7; (-1, 5)$

b  $\frac{7y}{5} - 2x = 3; (-1, 3)$

Parallel:  $y = \frac{-2x}{3} + \frac{13}{3}$

Parallel:  $y = \frac{10x}{2} + \frac{31}{7}$

Perpendicular:  $y = \frac{3x}{2} + \frac{13}{2}$

Perpendicular:  $y = \frac{23}{10} + \frac{7x}{10}$

c  $y - 2 + x = 4; (0, 2)$

d  $y + 1 = \frac{-5x}{2}; (-3, 4)$

Parallel:  $y = -x + 2$

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

Perpendicular:  $y = x + 2$

Perpendicular:  $y = \frac{2x}{5} + \frac{26}{5}$

e  $y = 17 + \frac{x}{4}; (6, 7)$

f  $y = 7 + 6x; (-1, 5)$

Parallel:  $y = \frac{x}{4} + \frac{11}{2}$

Parallel:  $y = 6x + 11$

Perpendicular:  $y = -4x + 31$

Perpendicular:  $y = \frac{-x}{6} + \frac{29}{6}$