

1. Determine the equation of a line perpendicular to $4y - 1 = 8x - 5$ and passing through $(-4, 5)$.
Please state your answer in **General Form**.

Opp Rec Slope:

$$4y - 1 = 8x - 5$$

$$4y = 8x - 5 + 1$$

$$\frac{4y}{4} = \frac{8x}{4} - \frac{4}{4}$$

$$y = 2x - 1$$

$$m = -\frac{1}{2}$$

Point $(-4, 5)$

$$y - y_1 = m(x - x_1)$$

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

$$2y - 10 = -1(x + 4)$$

$$2y - 10 = -x - 4$$

$$1x + 2y - 10 + 4 = 0$$

$$1x + 2y - 6 = 0$$

2. Determine the equation of a line parallel to $5 - 2y = 10x + 7$ and having an x-intercept of -5 .
Please state your answer in **General Form**.

Same Slope:

$$5 - 2y = 10x + 7 - 5$$

$$-2y = 10x + 2$$

$$\frac{-2y}{-2} = \frac{10x + 2}{-2}$$

$$y = -5x - 1$$

$$m = -5$$

x-int = -5
Point $(-5, 0)$

$$y - y_1 = m(x - x_1)$$

$$y - 0 = -5(x + 5)$$

$$y = -5x - 25$$

$$5x + y + 25 = 0$$

3. Determine the equation of a line passing through the points $(-5, 3)$ and $(2, -1)$.
Please state your answer in **Slope - Point Form**.

$$y - y_1 = m(x - x_1)$$

$$y - 3 = -\frac{4}{7}(x + 5)$$

OR

$$y + 1 = -\frac{4}{7}(x - 2)$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{-1 - 3}{2 + 5}$$

$$m = -\frac{4}{7}$$

4. Determine the equation of a **horizontal** line passing through (7, 3).

Please state your answer in **General Form**.

$$m = 0$$

$$\text{Point} = (x, y) = (7, 3)$$

$$y - y_1 = m(x - x_1)$$

$$y - 3 = 0(x - 7)$$

$$\boxed{y - 3 = 0}$$

5. Determine the equation of a line with a slope parallel to $4(y - 2) = 24x - 32$ and a y-intercept of 8. Please state your answer in **Slope-Intercept Form**.

Same Slope:

$$4(y - 2) = 24x - 32$$

$$4y - 8 = 24x - 32 + 8$$

$$\frac{4y}{4} = \frac{24x}{4} - \frac{24}{4}$$

$$y = 6x - 6$$

$$m = 6$$

$$b = 8$$

$$\boxed{y = 6x + 8}$$

6. Determine the equation of a line that has an x-intercept of -3 and a y-intercept of 8. Please state your answer in **General Form**.
7. Determine the equation of a line that has the same x-intercept as $8y - 3x = -12 + 4$ and is perpendicular to $5(y - 1) = 20x - 10$. Please state your answer in **General Form**.
8. Determine the equation of a line that has the same y-intercept as $3(2y - 1) = 12x - 3$.

$$6. \quad \begin{array}{l} x\text{-int} = -3 \\ y\text{-int} = 2 \end{array} \quad \begin{array}{l} x_1 \quad y_1 \\ (-3, 0) \\ (0, 2) \end{array} \quad m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{2 - 0}{0 - (-3)}$$

$$m = \frac{2}{3}$$

$$y - y_1 = m(x - x_1)$$

$$y - 0 = \frac{2}{3}(x + 3)$$

$$y = \frac{2}{3}(x + 3)$$

$$3y = 2(x + 3)$$

$$3y = 2x + 6$$

$$2x - 3y + 6 = 0$$

7. x-int (let $y=0$) :

$$8y - 3x = -12 + 4 + x$$

$$8(0) - 3x = -8 + x$$

$$-3x = -8 + x$$

$$\frac{-4x}{-4} = \frac{-8}{-4}$$

$$x = 2$$

(x, y)
 $(2, 0)$

Opp Rec Slope :

$$m = -\frac{1}{5}$$

$$(15x) - 3y = 8$$

$$-3y = -15x + 8$$

$$y = (5)x - \frac{8}{3}$$

$$7. \quad y - y_1 = m(x - x_1)$$

$$y - 0 = \frac{-1}{5}(x - 2)$$

$$y = \frac{-1}{5}(x - 2)$$

$$5y = -1(x - 2)$$

$$5y = -1x + 2$$

$$\boxed{x + 5y - 2 = 0}$$

8. y-int (let $x=0$) :

$$3(2y-1) = 12x - 33.$$

$$\text{by } -3 = 12(0) - 33.$$

$$\text{by } (-3) = -33 + 3.$$

$$\frac{\text{by}}{6} = \frac{-30}{6}$$

$$y = -5. \quad (b = -5)$$

Same Slope :

$$(15x) - 3y = 8$$

$$\frac{-3y}{-3} = \frac{-15x + 8}{-3}$$

$$y = (5x - \frac{8}{3}).$$

$$(m = 5)$$

$$y = (m)x + (b)$$

$$y = 5x - 5$$