Point-Slope Form

If you know the slope of a line and the coordinates of one of its points, you can write the equation in point-slope form

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

where the point is (x_1, y_1)

↑ the negative of y

↑ notice this is the negative of x

We must be able to convert each our forms into one of the other forms. Let's look at each.

Standard to Slope-intercept

$$3x - 2y = 6$$
$$-3x \quad\quad -3x$$
$$-2y = -3x + 6$$
$$\frac{-2y}{-2} = \frac{-3x}{-2} + \frac{6}{-2}$$
$$\boxed{y = \frac{3}{2}x - 3}$$

Slope intercept to Standard

$$y = (2/3x + 2)$$
$$(3)y = 3(2/3x + 2)$$
$$3y = 2x + 6$$
$$\boxed{-2x + 3y = 6}$$

Point-Slope to Standard

$$y - 8 = 2(x + 1)$$
$$y - 8 = 2x + 2$$
$$\boxed{-2x + y = 10}$$

Point-Slope to Slope-intercept

$$y - 7 = 3(x + 2)$$
$$y - 7 = 3x + 6$$
$$\boxed{y = 3x + 13}$$