Slope-intercept Form:

Memorize:

\[ y = mx + b \]

When

\[ y = m*0 + b \]

\[ y = b \]

(when \( b > 0 \))

(when \( b < 0 \))

Imagine a work pay scenario:

Every time you clock-in, you automatically get $1.00. This fixed amount would be \( b \) (the \( y \)-intercept), and your pay per hour would be \( m \), the rate (or slope).

To calculate \( m \) (slope) from two points \((x_1,y_1)\) and \((x_2,y_2)\):

\[
\frac{\text{Rise}}{\text{Run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}
\]

**Be very careful** of positive / negative signs:

\[ \Delta x (-) \quad \Delta x (+) \]

\[ \Delta y (-) \quad \Delta y (+) \]

Which means

\[
\text{Slope: } \frac{\Delta y}{\Delta x} = + \quad = +
\]