Slope Intercept Form

\[ y = mx + b \]

Write the equation of the line in slope intercept form.

\[ m = -\frac{3}{2} \; ; \; \text{and the line passes through} \left( -\frac{5}{2}, 2 \right). \]
\( \frac{5}{2}, 2 \)
\[ y = m \cdot x + b \]

\[ (-5, -3) \]

\[ (3, -2) \]

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>-3</td>
</tr>
<tr>
<td>3</td>
<td>-2</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
\text{change of } y &= y_2 - y_1 \\
\text{change of } x &= x_2 - x_1 \\
m &= \frac{y_2 - y_1}{x_2 - x_1}
\end{align*}
\]

\[ P_1(-5, -3) \]

\[ P_2(3, -2) \]

\[
\begin{align*}
\text{change of } y &= y_2 - y_1 \\
\text{change of } x &= x_2 - x_1 \\
m &= \frac{y_2 - y_1}{x_2 - x_1}
\end{align*}
\]
\[ y = m \ x + b \]

\[ (-5, -3) \]
\[ (3, -2) \]
\[ m = \frac{1}{8} \]

\[
\begin{align*}
(-5, -3) & \\
3 = 8b & \quad \text{from } -19 = 8b \\
\end{align*}
\]

\[
\begin{align*}
3 & = 8b \\
\Rightarrow & \\
\frac{3}{8} & = b \\
\end{align*}
\]