Worksheet #6 - Linear Inequalities

In this worksheet, you will practice sketching solutions of linear inequalities.

1. Graph the region described by the inequality $4x + y \leq 0$. Do each of the following points lie inside the region: $P = (1, 1)$ and $Q = (-1, -1)$?

2. Graph the region described by the inequality $2x - 3y \leq 4$. Do each of the following points lie inside the region: $P = (1, 1)$ and $Q = (1, -1)$?
3 Graph the region of points that satisfy both inequalities: \( x + y \geq 0 \) and \( x - y \leq 1 \). Label your lines and intersections.

4 Graph the region of points that satisfy both inequalities: \( 2x + 4y \geq 10 \) and \( 2x + 2y \leq 10 \). Label your lines and intersections.
Graph the region described by the inequalities:

\[ y - 2x \leq 4 \]
\[ y + x \geq 2 \]
\[ x \leq 4 \]
Graph the region described by the inequalities:

\[
\begin{align*}
2x + y &\leq 4 \\
x - y &\leq 2 \\
4x + y &\geq -3
\end{align*}
\]