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:

\[ 2x + y \leq 4 \]
\[ x - y \leq 2 \]
\[ 4x + y \geq -3 \]