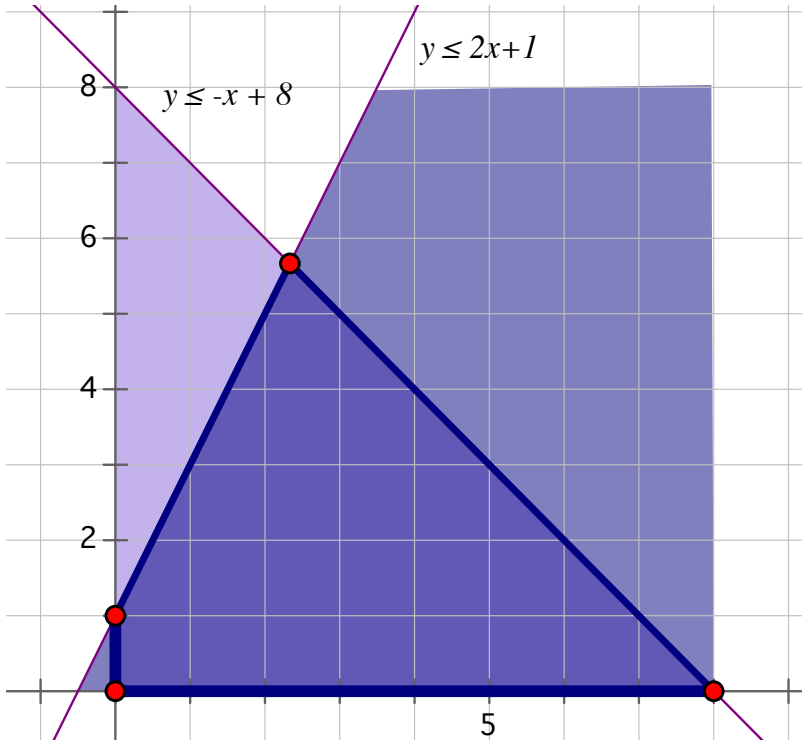
# Linear Program Example

Find the maximum and minimum values of the objective function **f(x, y) = 7x – 2y** subject to the following constraints.

**x + y ≤ 8  y ≤ 2x +1  x ≥ 0  y ≥ 0**



So, following the procedure above, I graphed the inequalities and found the corners. My last step to substitute those ordered pairs into the objective equation which was given as **f(x, y) = 7x – 2y**

Evaluating **f** for those 4 corners

f(0, 0) = 7(0) – 2(0) = 0

f(0, 1) = 7(0) – 2(1) = –2

f(8, 0) = 7(8) – 2(0) = 56

f(7/3, 17/3) = 7(7/3) – 2(17/3) = 49/3 – 34/3 = 15/3 = 5

We can see the largest value for **f** is 56 – the maximum occurs at (8, 0) the smallest value for **f** is –2 occurs at (0, 1)