transmitter (x_t) $x_t = (-2, -4)$ Power $= P(x) \propto \frac{1}{d^2}$ (max. this) d = distance

receiver (x_r)

Constraints: $c_1(x) = -x_1^2 - (x_2 + 4)^2 + 16 \geq 0$ (inside)

$c_2(x) = x_1 - x_2 - 6 \geq 0$

$\rightsquigarrow -16$

$\sqrt{-16} = -4$

a) Yes see stripes in circles

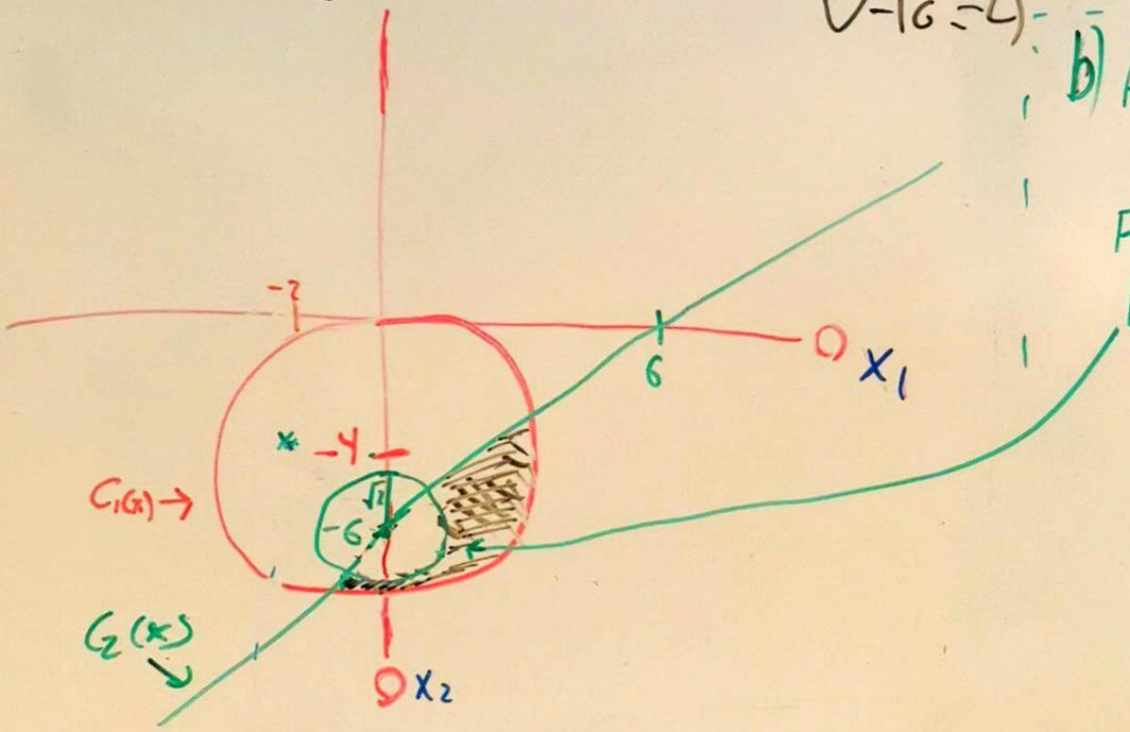
b) Additional constraint:

$c_3(x) = x_1^2 + (x_2 + 6)^2 \geq 2$ (out)

Feasible Region Convex? No (black area)

center: $(0, -6)$

Radius: $\sqrt{2}$



EXERCISE 1