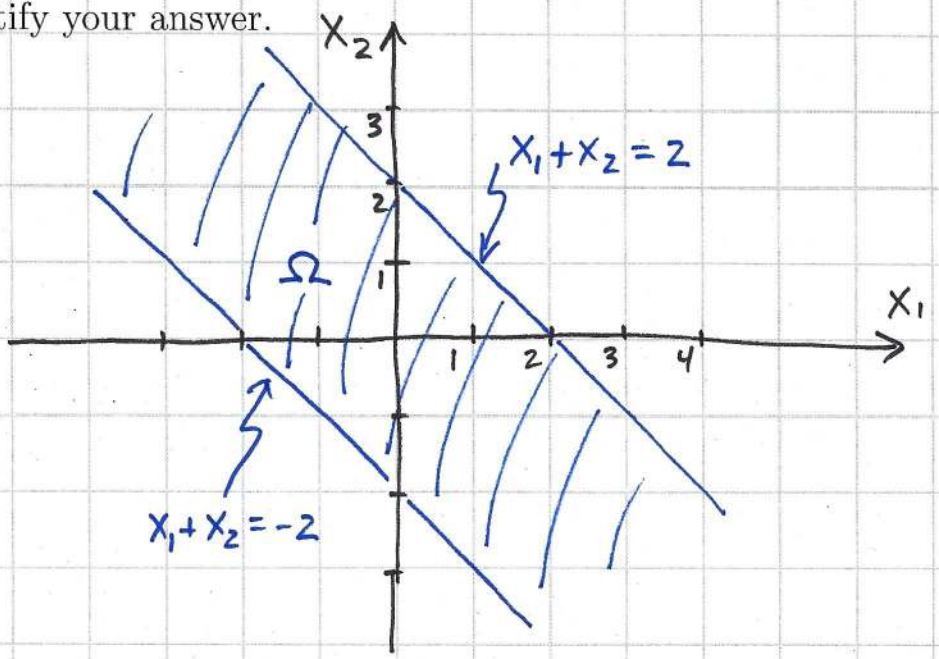
Name Answer Key

WSU ID# _____

Math 364 Quiz – Week #7

1. Sketch the feasible region $\Omega = \{x \in \mathbb{R}^2 \mid |x_1 + x_2| \leq 2\}$.
2. How many vertices does Ω have?
3. Can an optimization problem with this feasible region have an optimal solution? Justify your answer.

(1)



(2) Ω has no vertices

(3) Yes. For example, max $z = x_1 + x_2$ s.t. $x \in \Omega$ has infinitely many solutions. Every point on $x_1 + x_2 = 2$ is an optimal solution with $z^* = 2$.