1. Given the following constraints, maximize and minimize the value of $z = -0.4x + 3.2y$
   Constraints: $x \geq 0$; $y \geq 0$; $x \leq 5$; $x + y \leq 7$; $x + 2y \geq 4$; $y \leq x + 5$
2. Maximize the function $z = 5x + 6y$ subject to the following constraints: $x + y \leq 10$; $x - y \geq 3$; $5x + 4y \leq 35$; $x \geq 0$; $y \geq 0$
3. Buffalo Bob's River Explorers rents canoes and kayaks to people to float down the Buffalo River. He has $45,000 to purchase new boats. The canoes cost $600 each and rent for $25/day and the kayaks cost $750 each and rent for $30/day. He only has room for 65 boats in his shop. How many of each type of boat should he buy to maximize his revenue?
4. A 4-H member raises goats and pigs. She wants to raise no more than 16 animals including no more than 10 goats. It will cost $25 to raise each goat and $75 to raise each pig. She will make $12 in profit from each goat and $40 in profit from each pig. She has $900 to raise animals. How many of each type of animal should she raise to maximize profit?
   Solution to 3 & 4: https://www.youtube.com/watch?v=pvw8qoaVi-w&t=2s