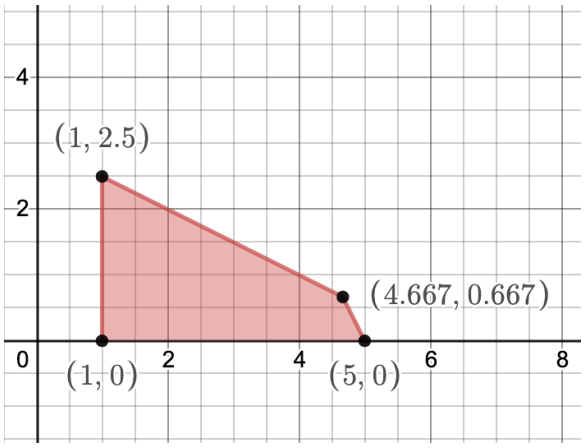
MAC 2234: Survey of Calculus II

Practice Exam # 4

The actual exam will be very similar to this practice test. You will have 120 minutes to complete the exam in Canvas. I suggest you attempt this under time restrictions to get the best practice possible.

(1) Find the maximum of the function $P = 8x + 3y$ on the region shown.



(2) Solve the linear programming problem: Maximize $P = 2x + 5y$ subject to

$$\begin{aligned} 2x + y &\leq 12 \\ x - 2y &\leq 1 \\ x \geq 0, \quad y &\geq 0 \end{aligned}$$

(3) Gator Electronics manufactures two models of satellite radios. The Blue Model requires 15 minutes of work on assembly line I and 10 minutes of work on assembly line II. The Orange Model requires 10 minutes of work on assembly line I and 12 minutes of work on assembly line II. At most 25 labor-hours of assembly time on line I and 22 labor-hours of assmbly time on line II are available each day. The company realizes a profit of \$12 on the Blue Model and \$10 on the Orange Model. How many of each model should be produced each day in order to maximize profit?

(4) Maximize $P = 20x + 12y + 18z$ subject to

$$\begin{aligned} 3x + y + 2z &\leq 9 \\ 2x + 3y + z &\leq 8 \\ x + 2y + 3z &\leq 7 \\ x \geq 0,\ y \geq 0 \quad z &\geq 0 \end{aligned}$$