SHOW ALL WORK AND JUSTIFY ALL ANSWERS.

1. Suppose we obtained the following corner points for the bounded feasible set of a system of equations: $A(1,3)$, $B(3,5)$, $C(6,4)$, and $D(4,1)$. Minimize the objective function: $C = 18x + 12y$.

2. For the following simplex tableaus: if it is a final tableau, write the value of each variable; if more steps are required, circle the next pivot element; if there is no solution, write no solution.

(a)
$$\left[\begin{array}{ccccccc|c} x & y & z & s_1 & s_2 & s_3 & P & constant \\ 1 & 0 & \frac{2}{7} & 0 & 2 & \frac{1}{7} & 0 & 300 \\ 0 & 0 & -\frac{4}{7} & 1 & \frac{1}{7} & -\frac{3}{7} & 0 & 100 \\ 0 & 1 & \frac{1}{7} & 0 & 1 & \frac{5}{7} & 0 & 80 \\ \hline 0 & 0 & \frac{26}{7} & 0 & 1 & \frac{2}{7} & 1 & 500 \end{array}\right]$$

(b)
$$\left[\begin{array}{ccccc|c} x & y & s_1 & s_2 & P & constant \\ 3 & \frac{1}{2} & 1 & 0 & 0 & 2 \\ 1 & 1 & 0 & 1 & 0 & 3 \\ \hline -5 & -8 & 0 & 0 & 1 & 0 \end{array}\right]$$