Consider the LP problem

Max $z = 10X_1 + 8X_2$

s.t.
$X_1 + X_2 \geq 3$
$2X_1 - X_2 \geq 2$
$2X_1 + 4X_2 \leq 10$
$X_1 \geq 0, X_2 \geq 0$

and written in equation form:

$-Z + 10X_1 + 8X_2 = 0$

(a) $\quad X_1 + X_2 - S_1 = 3$

(b) $\quad 2X_1 - X_2 - S_2 = 2$

(c) $\quad 2X_1 + 4X_2 + S_3 = 10$

(d&e) $\quad X_1 \geq 0, X_2 \geq 0, S_1 \geq 0, S_2 \geq 0, S_3 \geq 0$

1. Circle all of the lines (**a** through **e**) that form the boundary of the feasible region:

a   b   c   d   e

2. Circle all the points which form *corners* of the feasible region:

A   B   C   D   E   F   G   H   I

3. How many *basic* variables (including –z) must this LP problem have? _____

4. Circle the variables (in addition to **–z**) which are basic at the point labeled **I**:

$\mathbf{X_1} \quad \mathbf{X_2} \quad \mathbf{S_1} \quad \mathbf{S_2} \quad \mathbf{S_3}$