3.

	Basic Variables	Eqn. No.	Z	x_1	x_2	x_3	x_4	x_5	RHS
	Z	(0)	1	-1	-2				0
(A)	x_3	(1)		-2	2	1			3
	x_4	(2)		-2	4		1		6
	x_5	(3)		0	1			1	2
	Z	(0)	1	-3		1			3
(B)	x_2	(1)		-1	1	$\frac{1}{2}$			$\frac{3}{2}$
	x_4	(2)		3		-2	1		0
	x_5	(3)		1		$-\frac{1}{2}$		1	$\frac{1}{2}$

A and *B* represent two successive tableaus in the simplex method.

a) In going from *A* to *B*, what was the entering basic variable and what was the leaving basic variable?

b) There might be some problems in continuing the simplex method from tableau *B*. Why? What feature of the basic feasible solution corresponding to tableau *B* signals this difficulty? How could you tell in carrying out the simplex iteration at tableau *A* that this difficulty would arise?

c) What can you say about the next basic solution if, at tableau *A*, you had chosen x_2 as the entering basic variable and x_5 as the leaving basic variable? What if x_2 entered and x_4 left?

d) Perform one iteration from tableau *B*. What happened to the objective function value? To the values of each variable?

e) Look back at tableau *A* again. Can you conclude about the original problem whether it is infeasible, has an optimal solution, or is unbounded? Explain how.