Exercise 2(a), page 184:
Suppose that TOYCO wants to change the capacities of the three operations according to the following data
\[
\begin{bmatrix}
460 \\
500 \\
400
\end{bmatrix}
\]
Investigate the feasibility of the TOYCO solution (the optimum tableau of TOYCO is given at the start of Section 4.5). If the old solution is infeasible, use post-optimal analysis to determine a new optimum.

Exercise 1(b), page 186:
Suppose a fourth operation (machine) is introduced with the following specifications: the maximum production rate per product based on 480 minutes a day is 120 units of product 1, 480 units of product 2, and 240 units of product 3. Determine the optimal solution of TOYCO problem assuming that the daily capacity of machine 4 is 548 minutes.

Exercise 1(a),(b), page 189:
Investigate the optimality of the TOYCO solution for each of the following objective functions. If the solution changes, use post-optimal analysis to determine the new optimum.

(a) \( z = 2x_1 + x_2 + 4x_3 \).

(b) \( z = 3x_1 + 6x_2 + x_3 \).

Exercise 3(b), page 190:
In the TOYCO model, suppose that a new toy is introduced in the production, which requires 3,2, and 4 minutes respectively on the machines 1, 2, and 3. Determine an optimal solution given that price is $10 for the new toy.