1. Finer Furniture produces three types of furniture - tables, chairs, and bookcases. The production of each of these involves both a carpentry process and a finishing process. The time required in each of these as well as lumber requirements in each product are given below:

Table Chair Bookcase Amount available

Lumber 6 ft. 2 ft. 8 ft. 200 feet

Carpentry 3 hr. 2 hr. 3 hr. 80 hours

Finishing 2 hr. 1 hr. 1 hr. 40 hours

The profit generated by each table is $40, by each chair is $30, and by each bookcase is $35. The company wishes to get the maximum profit possible, and a linear program is to be developed for this purpose.

1. Carefully define the decision variables.
2. Set up the linear program.

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