**1. What is the optimal weekly production plan?**

|  |  |
| --- | --- |
| Product | Weekly Production |
| Table Chairs (TC) | 0 |
| Easy Chairs (EC) | 0 |
| Loveseats (LS) | 20 |
| Coffee Tables (CT) | 10 |
| End Tables (ET) | 10 |

The production plan targets the best weekly contribution to earnings, considering labor and product limits.

**2. What are the binding constraints?**

**What are the nonbinding constraints?**

The **Binding constraints** are by definition the ones that are fully utilized in the optimal solution — in other words changing them would affect the objective value.

|  |
| --- |
| Binding Constraints |
| Frame hours (fully used — constraint = 40 hours) |
| Stretching hours (fully used — constraint = 80 hours) |
| Finishing hours (fully used — constraint = 60 hours) |
| Coffee Table production limit (maxed out at 10 units) |
| End Table production limit (maxed out at 10 units) |

These constraints directly impose limits to the production options, but in a good sense.

**The Nonbinding constraints**: **None**.

**3. How would you present this information clearly to decision-makers?**

To present this information clearly to decision-makers, I use the following format:

**Executive Summary (Slide 1 or Paragraph 1)**

To optimize weekly revenue generation, Craft Studio Furnishings should manufacture 20 loveseats, 10 coffee tables, and 10 end tables. This production schedule effectively utilizes all available labor resources and adheres to product capacity constraints.

**Optimal Plan Table (Slide or Visual Element)**

|  |  |
| --- | --- |
| Product | Weekly Production |
| Table Chairs | 0 |
| Easy Chairs | 0 |
| Loveseats | 20 |
| Coffee Tables | 10 |
| End Tables | 10 |

**Binding Constraints Summary (Bullet List)**

* Frame labor hours (40 hours fully used)
* Stretching labor hours (80 hours fully used)
* Finishing labor hours (60 hours fully used)
* Maximum of 10 coffee tables
* Maximum of 10 end tables

**Recommendation**

* Considered current labor limits and product caps, increasing limits on coffee/end tables or expanding labor availability could further boost profit potential.
* We should always revisit the recommendation and the driving factors periodically.

The chosen format considers clarity, data-based recommendations, and feasible actions.