MEMO TO: 3310 Class

FROM: Appalachian Chair

REGARDING: Help with determining a production schedule

We are local company that makes black and gold painted rockers to sell to employees and alumni of Appalachian State. We do all the chairs in the summer. Here is a description of our production process:

- The first step is to do the milling and shaping of the lumber. This takes 36 minutes per chair.
- The second step is to assemble and finish the chair. This takes 48 minutes per chair.

We pay different rates each month in order to ensure we have people willing to do the work, especially in July. The relevant data for the two steps in the process are provided in Table 1.

Table 1. Demand (chairs), Available Time (hours), and Cost

	June	July	August
Finished product demand	500	450	600
Capacity of Milling	800	700	550
Unit Cost of Milling	$10	$12	$11
Capacity of Assembly and Finishing	1000	850	700
Unit Cost of Assembly	$15	$18	$16

We have demand we want to fill in each of the three summer months, and if we can make more in June or July we can rent storage at a reasonable cost: $5 per chair for the month. We would like to know how many to make each month and how many, if any, to store.

We have a few additional questions, which we would like answered individually:

1. We may need to reduce the number of chairs we have time to assemble by 20% due to an ongoing labor shortage. What impact would that have on the production schedule? What would be the cost?
2. The other impact we have had to deal with in the past is an increase in demand when Appalachian State is winning football games. How should we change the schedule if we wanted to have 1000 on hand in August?