

**2.22. Make/Buy Planning** The CammTex Fabric Mill is in the process of deciding on a production schedule. It wishes to know how to weave the various fabrics it will produce during the coming quarter. The sales department has confirmed orders for each of the 15 fabrics in the product line. These quarterly demands are given in the table below. Also tabulated is the variable cost for each fabric. The mill operates continuously during the quarter: 13 weeks, 7 days a week, and 24 hours a day.

CammTex uses two types of looms: general and regular. General looms can make all fabrics, and they are the only looms that can weave certain fabrics such as plaids. The production rate for each fabric on each type of loom is also given in the table. (If the production rate is zero, the fabric cannot be woven on that type of loom.) CammTex has 90 regular looms and 15 general looms.

Fabrics woven at CammTex proceed to the finishing department in the mill and are then sold. Any fabrics not woven in the mill because of limited capacity are subcontracted to an outside producer and sold at the selling price. The cost of purchasing from the subcontractor is also given in the table.

Fabric	Demand (yd)	General (yd/hr)	Regular (yd/hr)	Mill (\$/yd)	Sub. (\$/yd)
1	16,000	4.65	0	0.66	0.80
2	52,000	4.65	0	0.56	0.70
3	45,000	4.65	0	0.66	0.85
4	22,000	4.65	0	0.55	0.70
5	76,000	4.18	4.22	0.61	0.70
6	110,000	3.81	3.84	0.62	0.80
7	122,000	5.18	5.22	0.66	0.80
8	62,000	5.23	5.29	0.49	0.60
9	8000	5.23	5.29	0.50	0.70
10	69,000	5.23	5.29	0.44	0.60
11	70,000	3.73	3.29	0.61	0.80
12	82,000	4.18	4.22	0.57	0.75
13	10,000	4.40	4.44	0.54	0.70
14	360,000	5.23	5.29	0.31	0.45
15	62,000	4.18	4.22	0.50	0.70

- (a) What is minimum total cost of production and purchasing for CammTex?
- (b) Which fabrics should be made at the mill and which should be purchased? For those made at the mill, which loom types should be assigned to their production?