

①. Average weekly demand for cloth from BJ Jeans.

Demand	Probability	Demand $\times$ Probability
0	0.05	0
100	0.15	15
200	0.40	80
300	0.30	90
400	0.10	40

$$0 + 15 + 80 + 90 + 40 = \underline{\underline{225 \text{ yards}}}$$

② Average weekly available capacity for this contract at the Burlington plant.

yards	weeks	rand	
234.28	1	0.3357	Low Value + rand x (High Value - Low Value)
489.40	2	0.9735	$100 + \text{rand} \times (500 - 100)$
249.76	3	0.3744	$100 + (\text{rand} \times 400)$
338.36	4	0.5959	$= 100 + (0.3357 \times 400) + 100 + (0.9735 \times 400) +$
305.52	5	0.5138	$100 + (0.3744 \times 400) + 100 + (0.5959 \times 400) +$
223.60	6	0.3090	$100 + (0.5138 \times 400) + 100 + (0.3090 \times 400) +$
203.60	7	0.2590	$100 + (0.2590 \times 400) + 100 + (0.5705 \times 400) +$
328.20	8	0.5705	$100 + (0.9823 \times 400) + 100 + (0.9821 \times 400) +$
492.92	9	0.9823	$100 + (0.7016 \times 400) + 100 + (0.4475 \times 400) +$
492.84	10	0.9821	$100 + (0.7750 \times 400) + 100 + (0.5028 \times 400) +$
380.64	11	0.7016	$100 + (0.7399 \times 400) + 100 + (0.4429 \times 400) +$
279.00	12	0.4475	$100 + (0.0463 \times 400) + 100 + (0.3000 \times 400) +$
410.00	13	0.7750	$100 + (0.2299 \times 400) + 100 + (0.2315 \times 400)$
301.12	14	0.5028	$= 6125.44$
395.96	15	0.7399	
277.16	16	0.4429	$\frac{6125.44}{20} = 306.272$
118.52	17	0.0463	
191.96	18	0.3000	$= 306.272 \text{ yards}$
192.60	19	0.2299	
220.00	20	0.2315	

③ Number of weeks that demand exceeds available plant capacity.

demand average = 225 yards.

= 4 weeks.

Probability that demand exceeds available capacity.

number of weeks
demand exceeds capacity = 4 weeks.

Total weeks = 20 weeks.

$$\frac{4}{20} = \frac{1}{5} \quad || \quad \frac{1}{5} = 0.2$$