

Answer on Question #89720 – Economics | Other

1. A shopkeeper keeps stock of a popular brand of bread. Previous experience shows the daily demand pattern for the item with associated probabilities as follows:

Daily Demand: 0 10 20 30 40 50

Probability: 0.02 0.15 0.20 0.12 0.50 0.04

Simulate the demand for next 8 days for the following choice for random numbers

49 19 73 12 39 76 89 65.

Solution

Daily demand	0	10	20	30	40	50
Probability	0.02	0.15	0.20	0.12	0.5	0.01
Cumulative probability	0.02	0.17	0.37	0.49	0.99	1
Random Numbers Range	0-1	2-16	17-36	37-48	49-98	99-100

Probability of demand of 50 which is 0.04 is restricted to 0.01 because cumulative probability cannot exceed 1

Range is obtained from probability values converted to percentages

Day	1	2	3	4	5	6	7	8
Simulative random number	49	19	73	12	39	76	89	65
Range	49-98	17-36	49-98	2-16	37-48	49-98	49-98	49-98
Demand	40	20	40	10	30	40	40	40

Total demand for the next 8 days (last row table 2) = $(40+20+40+10+30+40+40+40) = 260$

Answer: Average demand = $260/8 = 32.5$ breads/day