Answer on Question #46540 – Math – Statistics and Probability

Problem.

Sachin Tendulkar scores runs in T-20 league match with following discrete probability density function.

Runs (X) 50 35 25 15 45 10

f(x) 0.10 0.18 0.20 0.25 0.12 0.15

Simulate the score of Sachin Tendulkar for four league matches using following three digit random numbers 976, 009, 280, and 850. Hence estimate his average score.

Solution:

Runs	10	15	25	35	45	50
f(x)	0.15	0.25	0.20	0.18	0.12	0.10
F(x)	0.15	0.4	0.6	0.78	0.90	1

where $F(x)$ culmitative probability function.

Then to simulate the score with three digit random numbers n we use next table.

Runs	10	15	25	35	45	50
n range	$[000, 150)$	$[150, 400)$	$[400, 600)$	$[600, 780)$	$[780, 900)$	$[900, 1000)$

Therefore for 976, 009, 280, and 850 we have scores 50, 10, 15 and 45 respectively. The average of this scores is $\dfrac{50+10+15+45}{4} = 30$.

Answer: 976 – 50, 009 – 10, 280 – 15, 850 – 45; average – 30.