

6. The Garda chief of a city knows that the probabilities for 0, 1, 2, 3, 4 or 5 car thefts on any given day are, respectively, 0.21, 0.37, 0.25, 0.13, 0.03 and 0.01. How many car thefts can he expect per day?

x	No. Car thefts	0	1	2	3	4	5	Sum
P(x)	Probability	0.21	0.37	0.25	0.13	0.03	0.01	1
x · P(x)		0	0.37	0.5	0.39	0.12	0.05	1.43
	mean	$\bar{X} = \frac{1.43}{1} = 1.43$						

16. A test consists of three sections:

**Section 1** has 20 multiple-choice questions in which students select 1 correct answer from 4 options (A, B, C, D).

**Section 2** has 10 true-or-false questions in which students choose either true or false.

**Section 3** has 10 multiple-choice questions in which students select 1 correct answer from 3 options (A, B, C).

If every question in the test is randomly answered, what is the expected number of correct answers?

Section 1	$P(\text{correct}) = \frac{1}{4}$ $\text{No. correct} = \left(\frac{1}{4}\right)(20) = 5$
Section 2	$P(\text{correct}) = \frac{1}{2}$ $\text{No. correct} = \frac{1}{2}(10) = 5$
Section 3	$P(\text{correct}) = \frac{1}{3}$ $\text{No. correct} = \frac{1}{3}(10) = 3\frac{1}{3}$
Total	$= 5 + 5 + 3\frac{1}{3} = 13\frac{1}{3}$