

Example 1:

If  $X$  is a random number selected from  $[1, 2, \dots, n]$ , find  $E(X)$  and  $E(X^2)$ .

Example 2:

A coin has probability  $\frac{2}{3}$  of turning up "heads". Find the expected number of tosses until the first "tail" occurs.

Example 3:

A bin of 5 electrical components is known to contain 2 that are defective. If the components are to be tested, one by one, randomly, until the defectives are discovered, find the expected number of tests that are made.