Introduction to Probability Part 2
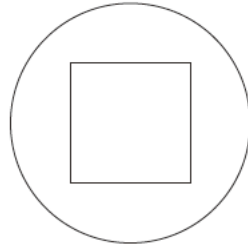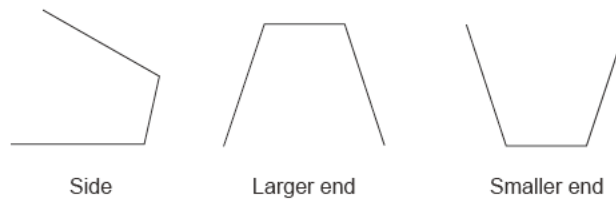
6. A target is made of a circular wooden block of radius 10 cm. A small square-shaped photograph of dimension 5 cm × 5 cm is pinned on the target. Fred shoots at the target for 50 times. Suppose the chance of hitting each point on the target is the same, estimate the expected number of times hitting the photograph.

7. When a paper cup is tossed, it may land on its side, on its smaller end or on its larger end. In an experiment, paper cup is tossed 50 times and the results are shown in the table below.

Outcome	Side	Larger end	Smaller end
Frequency	28	x	8

(a) Find x.

(b) What is the experimental probability that the cup does not land on its side?

10. In a game of tossing a fair dice, \$4 will be given as a prize if the dice shows an even number and \$2 will be given as a prize if the dice shows an odd number. Find the expected value of the prize of this game.

11. Among 8 000 lucky draw tickets, two tickets will win prizes. One ticket will win \$100 000 while another will win \$20 000. If all 8 000 tickets are sold out, find the expected value of the prize of each ticket.