

Binomial Distribution

O/N/2006/Q7

A manufacturer makes two sizes of elastic bands: large and small. 40% of the bands produced are large bands and 60% are small bands. Assuming that each pack of these elastic bands contains a random selection, calculate the probability that, in a pack containing 20 bands, there are

- (i) equal numbers of large and small bands, [2]
- (ii) more than 17 small bands. [3]

M/J/2006/Q7

A survey of adults in a certain large town found that 76% of people wore a watch on their left wrist, 15% wore a watch on their right wrist and 9% did not wear a watch.

- (i) A random sample of 14 adults was taken. Find the probability that more than 2 adults did not wear a watch. [4]

M/J/2007/Q6

The probability that New Year's Day is on a Saturday in a randomly chosen year is $\frac{1}{7}$.

- (i) 15 years are chosen randomly. Find the probability that at least 3 of these years have New Year's Day on a Saturday. [4]

O/N/2007/Q6

On any occasion when a particular gymnast performs a certain routine, the probability that she will perform it correctly is 0.65, independently of all other occasions.

- (i) Find the probability that she will perform the routine correctly on exactly 5 occasions out of 7. [2]

