

Memo 2019-8EK-00003(1)

(1) A die is thrown. What is the probability to:

(a) throw a factor of twelve?

$$\frac{5}{6}$$

[Factors of 12: 1; 2; 3; 4; 6; 12] → Possible numbers: 1; 2; 3; 4; 5; 6

(b) throw a three?

$$\frac{1}{6}$$

[Only one 3 from the six possible numbers.]

(c) throw a seven?

$$\frac{0}{6}$$

= 0 [No 7 on the dice.]

(d) throw a compound number?

$$\frac{2}{6}$$

= $\frac{1}{3}$ [Compound numbers: 4 and 6]

$$[\text{Total} = 120 + 5 + 63 = 188]$$

(2) On a farm there are 120 cows, 5 bulls and 63 calves. All the cattle are gathered to be weighed.
What is the probability that the first one weighed is:

(a) a bull?

$$\frac{5}{188}$$

(b) not a calf? [Thus a cow or a bull.]

$$\frac{125}{188}$$

(c) a cow?

$$\frac{120}{188} = \frac{30}{47}$$

$$[\text{Total} = 12 + 6 + 4 + 4 = 26]$$

(3) A box contains 12 red toffees, 6 blue toffees, 4 green toffees and 4 purple toffees. If you take one toffee from the box, what is the probability that the toffee:

(a) is red?

$$\frac{12}{26} = \frac{6}{13}$$

(b) is either blue or green? [6 + 4 = 10]

$$\frac{10}{26} = \frac{5}{13}$$

(c) not purple? [26 - 4 = 22]

$$\frac{22}{26} = \frac{11}{13}$$

(d) is yellow?

$$\frac{0}{26}$$

= 0 [No yellow toffees.]

(4) A pack of playing cards (52 cards) is shuffled and then one card is drawn from the pack. What is the probability that the card which is drawn is:

(a) an ace?

$$\frac{4}{52} = \frac{1}{13}$$

(b) a 7 of diamonds?

$$\frac{1}{52}$$

(c) a club, smaller than six?

$$\frac{5}{52}$$

(d) a black heart?

$$\frac{0}{52} = 0 \quad [\text{All hearts are red.}]$$