1. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?

$\frac{1}{2}$

$\frac{2}{5}$

$\frac{8}{15}$

$\frac{9}{20}$

Answer: Option

Explanation:

Here, S = {1, 2, 3, 4, ..., 19, 20}.

Let E = event of getting a multiple of 3 or 5 = {3, 6 , 9, 12, 15, 18, 5, 10, 20}.

$\therefore$ $P(E) = \frac{n(E)}{n(S)} = \frac{9}{20}$.

2. A bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue?

$\frac{10}{21}$

$\frac{11}{21}$

$\frac{2}{7}$

$\frac{5}{7}$

Answer: Option

Explanation:

Total number of balls = (2 + 3 + 2) = 7.

Let S be the sample space.

Then, $n(S)$ = Number of ways of drawing 2 balls out of 7

$= {}^{7}C_{2}$ `

$= \frac{(7 \times 6)}{(2 \times 1)}$

$= 21.$

Let E = Event of drawing 2 balls, none of which is blue.

$\therefore$ n (E) = Number of ways of drawing 2 balls out of (2 + 3) balls.

$= {}^{5}C_{2}$

$= \frac{(5 \times 4)}{(2 \times 1)}$

$= 10.$

$\therefore$ $P(E) = \frac{n(E)}{n(S)} = \frac{10}{21}.$

3. In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What is the probability that it is neither red nor green?

$\frac{1}{3}$

$\frac{3}{4}$

$\frac{7}{19}$

$\frac{8}{21}$

$\frac{9}{21}$

Answer: Option

Explanation:

Total number of balls = (8 + 7 + 6) = 21.

Let E = event that the ball drawn is neither red nor green

= event that the ball drawn is blue.

$\therefore$ n (E) = 7.

$\therefore$ $P(E) = \frac{n(E)}{n(S)} = \frac{7}{21} = \frac{1}{3}.$

4. What is the probability of getting a sum 9 from two throws of a dice?

$\frac{1}{6}$

$\frac{1}{8}$

$\frac{1}{9}$

$\frac{1}{12}$

Answer: Option

Explanation:

In two throws of a dice, n (S) = (6 x 6) = 36.

Let E = event of getting a sum ={(3, 6), (4, 5), (5, 4), (6, 3)}.

$\therefore$ $P(E) = \frac{n(E)}{n(S)} = \frac{4}{36} = \frac{1}{9}$.

5. Three unbiased coins are tossed. What is the probability of getting at most two heads?

$\frac{3}{4}$

$\frac{1}{4}$

$\frac{3}{8}$

$\frac{7}{8}$

Answer: Option

Explanation:

Here S = {TTT, TTH, THT, HTT, THH, HTH, HHT, HHH}

Let E = event of getting at most two heads.

Then E = {TTT, TTH, THT, HTT, THH, HTH, HHT}.

$\therefore$ $P(E) = \frac{n(E)}{n(S)} = \frac{7}{8}$.