

Probability Handout

Level: Easy

- 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?
 - $\frac{1}{2}$
 - $\frac{2}{5}$
 - $\frac{8}{15}$
 - $\frac{9}{20}$

- 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?
 - $\frac{10}{21}$
 - $\frac{11}{21}$
 - $\frac{2}{7}$
 - $\frac{5}{7}$

- 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?
 - $\frac{1}{3}$
 - $\frac{3}{4}$
 - $\frac{7}{19}$
 - $\frac{8}{21}$
 - $\frac{9}{21}$

- What is the probability of getting a sum 9 from two throws of a dice?
 - $\frac{1}{6}$
 - $\frac{1}{8}$
 - $\frac{1}{9}$
 - $\frac{1}{12}$

- Three unbiased coins are tossed. What is the probability of getting at most two heads?
 - $\frac{3}{4}$
 - $\frac{1}{4}$
 - $\frac{3}{8}$
 - $\frac{7}{8}$

- Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even?
 - $\frac{1}{2}$
 - $\frac{3}{4}$
 - $\frac{3}{8}$
 - $\frac{5}{16}$

- In a class, there are 15 boys and 10 girls. Three students are selected at random. The probability that 1 girl and 2 boys are selected, is:

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A. $\frac{21}{46}$

B. $\frac{25}{117}$

C. $\frac{1}{50}$

D. $\frac{3}{25}$

8. In a lottery, there are 10 prizes and 25 blanks. A lottery is drawn at random. What is the probability of getting a prize?

A. $\frac{1}{10}$

B. $\frac{2}{5}$

C. $\frac{2}{7}$

D. $\frac{5}{7}$

9. From a pack of 52 cards, two cards are drawn together at random. What is the probability of both the cards being kings?

A. $\frac{1}{15}$

B. $\frac{25}{57}$

C. $\frac{35}{256}$

D. $\frac{1}{221}$

10. Two dice are tossed. The probability that the total score is a prime number is:

A. $\frac{1}{6}$

B. $\frac{5}{12}$

C. $\frac{1}{2}$

D. $\frac{7}{9}$

11. A card is drawn from a pack of 52 cards. The probability of getting a queen of club or a king of heart is:

A. $\frac{1}{13}$

B. $\frac{2}{13}$

C. $\frac{1}{26}$

D. $\frac{1}{52}$

12. A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag. The probability that all of them are red, is:

A. $\frac{1}{22}$

B. $\frac{3}{22}$

C. $\frac{2}{91}$

D. $\frac{2}{77}$

13. Two cards are drawn together from a pack of 52 cards. The probability that one is a spade and one is a heart, is:

A. $\frac{3}{20}$

B. $\frac{29}{34}$

C. $\frac{47}{100}$

D. $\frac{13}{100}$

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14. One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is a face card (Jack, Queen and King only)?

A. $\frac{1}{13}$

B. $\frac{3}{13}$

C. $\frac{1}{4}$

D. $\frac{9}{52}$

15. A bag contains 6 black and 8 white balls. One ball is drawn at random. What is the probability that the ball drawn is white?

A. $\frac{3}{4}$

B. $\frac{4}{7}$

C. $\frac{1}{8}$

D. $\frac{3}{7}$

Solutions

- D. Here, $S = \{1, 2, 3, 4, \dots, 19, 20\}$. Let $E =$ event of getting a multiple of 3 or 5 = $\{3, 6, 9, 12, 15, 18, 5, 10, 20\}$. So answer: $9/20$
- A. Both non red will be $5/7 \times 4/6 = 10/21$.
- A. means blue ball = $7 / 21$
- C. $\{(3, 6), (4, 5), (5, 4), (6, 3)\}$. = $4/36$
- D. Here $S = \{TTT, TTH, THT, HTT, THH, HTH, HHT, HHH\}$ Then $E = \{TTT, TTH, THT, HTT, THH, HTH, HHT\}$. Ie $7/8$
- $E = \{(1, 2), (1, 4), (1, 6), (2, 1), (2, 2), (2, 3), (2, 4), (2, 5), (2, 6), (3, 2), (3, 4), (3, 6), (4, 1), (4, 2), (4, 3), (4, 4), (4, 5), (4, 6), (5, 2), (5, 4), (5, 6), (6, 1), (6, 2), (6, 3), (6, 4), (6, 5), (6, 6)\} = 27/36 = \frac{3}{4}$
- Number ways of selecting 3 students out of 25 - ${}^{25}C_3 = 2300$. $n(E) = ({}^{10}C_1 \times {}^{15}C_2) = 1050$; Answer = $1050 / 2300$
- $10/(25+10) = 10/35$
- ${}^4C_2 / {}^{52}C_2 = 6 / 1326 = 1/221$
- Prime = $\{(1, 1), (1, 2), (1, 4), (1, 6), (2, 1), (2, 3), (2, 5), (3, 2), (3, 4), (4, 1), (4, 3), (5, 2), (5, 6), (6, 1), (6, 5)\}$ ie $15/36 = 5/12$
- $2/52 = 1/26$
- ${}^5C_3 / {}^{15}C_3 = 10/455 = 2/91$
- $({}^{13}C_1 \times {}^{13}C_1) = (13 \times 13) = 169$, ${}^{52}C_2 = 169/1326 = 13/102$
- P (getting a face card) = $12/52 = 3/13$
- White 8 / total 14 = $8/14 = 4/7$