



1. A coin is tossed 100 times and tail appears 50 times. If the coin is tossed again, what is the probability of getting a head?

(i) $\frac{2}{3}$ (ii) $\frac{3}{4}$ (iii) $\frac{5}{6}$ (iv) $\frac{1}{2}$ (v) $\frac{4}{5}$

2. A coin is tossed 100 times and head appears 85 times. If the coin is tossed again, what is the probability of getting a tail?

(i) $\frac{1}{5}$ (ii) $\frac{4}{21}$ (iii) $\frac{17}{20}$ (iv) $\frac{3}{20}$ (v) $\frac{1}{10}$

3. Two coins are tossed simultaneously 60 times and it was observed that both heads appeared 30 times. If two coins are tossed simultaneously at random, what is the probability of getting both heads?

(i) $\frac{1}{2}$ (ii) $\frac{2}{3}$ (iii) $\frac{3}{4}$ (iv) $\frac{4}{5}$ (v) $\frac{5}{6}$

4. Two coins are tossed simultaneously 70 times and it was observed that both tails appeared 50 times. If two coins are tossed simultaneously at random, what is the probability of getting both tails?

(i) $\frac{5}{7}$ (ii) $\frac{3}{4}$ (iii) $\frac{6}{7}$ (iv) $\frac{4}{7}$ (v) $\frac{2}{7}$

5. A die is thrown 130 times. Prime numbers appeared on the upper face 80 times. If a die is thrown at random, what is the probability of getting a prime number?

(i) $\frac{8}{13}$ (ii) $\frac{9}{14}$ (iii) $\frac{7}{13}$ (iv) $\frac{5}{13}$ (v) $\frac{9}{13}$

6. A survey of 150 men showed that only 30 of them know French. Out of these men, if one is selected at random, what is the probability that the selected man knows French?

(i) $\frac{1}{3}$ (ii) $\frac{4}{5}$ (iii) $\frac{1}{5}$ (iv) $\frac{2}{5}$ (v) 0

7. A single unbiased coin is tossed. Find the probability of getting a head.

(i) $\frac{3}{4}$ (ii) $\frac{1}{2}$ (iii) $\frac{5}{6}$ (iv) $\frac{2}{3}$ (v) $\frac{4}{5}$

8. Two unbiased coins are tossed simultaneously. Find the probability of getting exactly one head.

(i) $\frac{3}{4}$ (ii) $\frac{2}{3}$ (iii) $\frac{4}{5}$ (iv) $\frac{1}{2}$ (v) $\frac{5}{6}$

9. Two unbiased coins are tossed simultaneously. Find the probability of getting at least one head.

(i) $\frac{3}{4}$ (ii) $\frac{4}{5}$ (iii) 1 (iv) $\frac{1}{2}$ (v) $\frac{1}{4}$

10. Two unbiased coins are tossed simultaneously. Find the probability of getting at least two heads.

(i) $\frac{2}{5}$ (ii) 0 (iii) $\frac{1}{4}$ (iv) $\frac{1}{2}$ (v) $\frac{3}{4}$

11. Two unbiased coins are tossed simultaneously. Find the probability of getting at most one head.

(i) 1 (ii) $\frac{3}{4}$ (iii) $\frac{1}{2}$ (iv) $\frac{1}{4}$ (v) $\frac{4}{5}$

12. Two unbiased coins are tossed simultaneously. Find the probability of getting no head.

(i) $\frac{3}{4}$ (ii) $\frac{1}{4}$ (iii) $\frac{2}{5}$ (iv) $\frac{1}{2}$ (v) 0

13. Three unbiased coins are tossed simultaneously. Find the probability of getting exactly one head.

(i) $\frac{1}{4}$ (ii) $\frac{4}{9}$ (iii) $\frac{5}{8}$ (iv) $\frac{1}{2}$ (v) $\frac{3}{8}$

14. Three unbiased coins are tossed simultaneously. Find the probability of getting at least one head.

(i) $\frac{7}{8}$ (ii) $\frac{1}{8}$ (iii) $\frac{3}{4}$ (iv) $\frac{8}{9}$ (v) 1

15. Three unbiased coins are tossed simultaneously. Find the probability of getting at least two heads.

(i) $\frac{4}{5}$ (ii) $\frac{3}{4}$ (iii) $\frac{1}{2}$ (iv) $\frac{5}{6}$ (v) $\frac{2}{3}$

16. Three unbiased coins are tossed simultaneously. Find the probability of getting at most one head.

(i) $\frac{5}{6}$ (ii) $\frac{2}{3}$ (iii) $\frac{3}{4}$ (iv) $\frac{1}{2}$ (v) $\frac{4}{5}$

17. Three unbiased coins are tossed simultaneously. Find the probability of getting no head.

(i) $\frac{2}{9}$ (ii) 0 (iii) $\frac{1}{4}$ (iv) $\frac{7}{8}$ (v) $\frac{1}{8}$

18. Two unbiased dice are thrown simultaneously. Find the probability of getting a doublet.

(i) $\frac{2}{7}$ (ii) $\frac{5}{6}$ (iii) 0 (iv) $\frac{1}{6}$ (v) $\frac{1}{3}$

19. Two unbiased dice are thrown simultaneously. Find the probability of getting 6 as the sum of the two numbers on the dice.

(i) $\frac{6}{37}$ (ii) $\frac{5}{36}$ (iii) $\frac{1}{6}$ (iv) $\frac{31}{36}$ (v) $\frac{1}{9}$

20. Two unbiased dice are thrown simultaneously. Find the probability of getting at least 4 as the sum of the two numbers on the dice.

(i) $\frac{11}{12}$ (ii) $\frac{1}{12}$ (iii) 1 (iv) $\frac{12}{13}$ (v) $\frac{5}{6}$

21. A die is thrown twice. What is the probability that 4 will come up atleast once?

(i) $\frac{5}{18}$ (ii) $\frac{1}{3}$ (iii) $\frac{12}{37}$ (iv) $\frac{11}{36}$ (v) $\frac{25}{36}$

22. A die is thrown twice. What is the probability that 5 will not come up either time?

(i) $\frac{11}{36}$ (ii) $\frac{26}{37}$ (iii) $\frac{25}{36}$ (iv) $\frac{13}{18}$ (v) $\frac{2}{3}$

23. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is a queen?

(i) $\frac{1}{4}$ (ii) $\frac{1}{52}$ (iii) $\frac{1}{13}$ (iv) $\frac{3}{13}$ (v) $\frac{1}{26}$

24. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is a black king?

(i) $\frac{1}{13}$ (ii) $\frac{1}{52}$ (iii) $\frac{1}{26}$ (iv) $\frac{1}{4}$ (v) $\frac{3}{13}$

25. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is a queen of hearts?

(i) $\frac{1}{52}$ (ii) $\frac{1}{26}$ (iii) $\frac{1}{4}$ (iv) $\frac{1}{13}$ (v) $\frac{3}{13}$

26. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is '7' of diamonds?

(i) $\frac{1}{26}$ (ii) $\frac{1}{4}$ (iii) $\frac{3}{13}$ (iv) $\frac{1}{13}$ (v) $\frac{1}{52}$

27. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is '2' of black suit ?

(i) $\frac{1}{52}$ (ii) $\frac{1}{13}$ (iii) $\frac{1}{26}$ (iv) $\frac{3}{13}$ (v) $\frac{1}{4}$

28. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is a spades?

(i) $\frac{1}{26}$ (ii) $\frac{1}{52}$ (iii) $\frac{1}{13}$ (iv) $\frac{3}{13}$ (v) $\frac{1}{4}$

29. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is a face card ?

(i) $\frac{1}{4}$ (ii) $\frac{1}{52}$ (iii) $\frac{3}{13}$ (iv) $\frac{1}{26}$ (v) $\frac{1}{13}$

30. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability that the card drawn is either a black card or a queen?

(i) $\frac{1}{52}$ (ii) $\frac{7}{13}$ (iii) $\frac{3}{13}$ (iv) $\frac{1}{13}$ (v) $\frac{1}{26}$

31. An unbiased die is thrown once. Find the probability of getting a prime number?

(i) $\frac{3}{4}$ (ii) $\frac{2}{3}$ (iii) $\frac{4}{5}$ (iv) $\frac{1}{2}$ (v) $\frac{5}{6}$

32. An unbiased die is thrown once. Find the probability of getting an even number?

(i) $\frac{3}{4}$ (ii) $\frac{4}{5}$ (iii) $\frac{2}{3}$ (iv) $\frac{1}{2}$ (v) $\frac{5}{6}$

33. An unbiased die is thrown once. Find the probability of getting a 3?

(i) $\frac{1}{6}$ (ii) 0 (iii) $\frac{5}{6}$ (iv) $\frac{2}{7}$ (v) $\frac{1}{3}$

34. An unbiased die is thrown once. Find the probability of getting a number greater than 4?

(i) $\frac{1}{3}$ (ii) 0 (iii) $\frac{2}{3}$ (iv) $\frac{1}{2}$

35. An unbiased die is thrown once. Find the probability of getting a number less than 5?

(i) $\frac{3}{4}$ (ii) $\frac{1}{3}$ (iii) $\frac{2}{3}$ (iv) 1

36. An unbiased die is thrown once. Find the probability of getting a number between 2 and 6?

(i) $\frac{5}{6}$ (ii) $\frac{1}{2}$ (iii) $\frac{2}{3}$ (iv) $\frac{4}{5}$ (v) $\frac{3}{4}$

37. When two coins are tossed simultaneously, how many elementary events are possible?

(i) 4 (ii) 2 (iii) 6 (iv) 5 (v) 3

38. When two dice are thrown simultaneously, how many elementary events are possible?

(i) 37 (ii) 39 (iii) 34 (iv) 36 (v) 35

39. When a card is selected randomly out of a pack of cards, how many elementary events are possible?

(i) 55 (ii) 53 (iii) 49 (iv) 51 (v) 52

40. What is the probability of a sure event?

(i) 0 (ii) $\frac{1}{2}$ (iii) $\frac{1}{4}$ (iv) 1 (v) $\frac{3}{4}$

41. What is the probability of an impossible event?

(i) $\frac{3}{4}$ (ii) $\frac{1}{2}$ (iii) 0 (iv) 1 (v) $\frac{1}{4}$

42. Which of the following are true?

- a) Probability of getting 110 marks out of 100 is 1.1
- b) If the probability is too less, it will become negative
- c) If the probability of failing the exam is 0.33, the probability of passing the exam is 0.67
- d) The probability of an event that cannot happen is unknown
- e) The probability of an event that is very likely to happen is 1

(i) {c} (ii) {b,c} (iii) {d,e,c} (iv) {a,c}

43. Which of the following experiments have equally likely outcomes?

- a) A man throws a die. The number on the top is either 1 or not 1
- b) A man starts his vehicle. It starts or it does not start
- c) A true/false question is attempted. The answer is either right or wrong
- d) A baby is born. It is a boy or girl
- e) A ball is hit. It reaches the boundary or not

(i) {b,d} (ii) {c,d} (iii) {b,d,c} (iv) {a,c} (v) {e,a,c}

44. Which of the following are possible values of probability?

- a) 0.33
- b) 4
- c) $\frac{2}{3}$
- d) -2.1
- e) $\frac{5}{2}$

(i) {a,c} (ii) {e,b,a} (iii) {d,c,a} (iv) {b,a} (v) {d,c}

45. If $P(E) = 0.5$, find $P(\bar{E})$

(i) 1.5 (ii) 2.5 (iii) 7.5 (iv) 0.5 (v) 8.5

46. Which of the following are true?

- a) The probability of an impossible event is 1
- b) The probability of a sure event is 1
- c) The probability of an unsure event is 0
- d) The probability of an impossible event can be > 1
- e) For an event E, we have $0 \leq P(E) \leq 1$

(i) {c,e} (ii) {c,e,b} (iii) {b,e} (iv) {d,a,b} (v) {a,b}

47. Which of the following are true?

- a) $P(E) - P(\bar{E}) = 0$
- b) $P(E) + P(\bar{E}) = 0$
- c) $P(E) = 1 - P(\bar{E})$
- d) $P(E) - P(\text{not } E) = 0$
- e) $P(E) + P(\text{not } E) = 1$

(i) {b,e} (ii) {c,e} (iii) {a,c} (iv) {b,e,c} (v) {d,a,c}

48. A die is thrown 510 times. The number 6 appears on the upper face 86 times. Now the die is thrown at random. What is the probability of getting a 6 ?

(i) $\frac{212}{255}$ (ii) $\frac{14}{85}$ (iii) $\frac{11}{64}$ (iv) $\frac{43}{255}$ (v) $\frac{44}{255}$

171 families with 2 children were selected randomly, and the following data were recorded

49.

| No. of girls in a family | 0 | 1 | 2 |
|--------------------------|----|----|----|
| Number of families | 45 | 54 | 72 |

Compute the probability of the family, chosen at random, having no girls.

(i) $\frac{5}{19}$ (ii) $\frac{14}{19}$ (iii) $\frac{3}{10}$ (iv) $\frac{6}{19}$ (v) $\frac{4}{19}$

Three coins are tossed simultaneously 145 times with the following frequencies of different outcomes :

50.

| Outcome | 3 heads | 2 heads | 1 heads | No heads |
|-----------|---------|---------|---------|----------|
| Frequency | 25 | 30 | 35 | 55 |

If the three coins are simultaneously tossed again, compute the probability of '3 heads' coming up.

(i) $\frac{6}{29}$ (ii) $\frac{4}{29}$ (iii) $\frac{1}{5}$ (iv) $\frac{24}{29}$ (v) $\frac{5}{29}$

A die is thrown 375 times with the frequencies for outcomes 1, 2, 3, 4, 5 and 6 as given in the following table

51.

| Outcome | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------|----|----|----|----|----|----|
| Frequency | 35 | 50 | 55 | 60 | 80 | 95 |

If the die is thrown again randomly, find the probability of getting 1 as outcome.

(i) $\frac{2}{25}$ (ii) $\frac{2}{19}$ (iii) $\frac{7}{75}$ (iv) $\frac{8}{75}$ (v) $\frac{68}{75}$

52. A die is thrown twice. What is the probability that 5 will not come up either time?

(i) $\frac{11}{36}$ (ii) $\frac{13}{18}$ (iii) $\frac{26}{37}$ (iv) $\frac{2}{3}$ (v) $\frac{25}{36}$

53. A die is thrown twice. What is the probability that 4 will come atleast once?

(i) $\frac{12}{37}$ (ii) $\frac{25}{36}$ (iii) $\frac{1}{3}$ (iv) $\frac{5}{18}$ (v) $\frac{11}{36}$

Assignment Key

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|----------|----------|-----------|-----------|-----------|-----------|
| 1) (iv) | 2) (iv) | 3) (i) | 4) (i) | 5) (i) | 6) (iii) |
| 7) (ii) | 8) (iv) | 9) (i) | 10) (iii) | 11) (ii) | 12) (ii) |
| 13) (v) | 14) (i) | 15) (iii) | 16) (iv) | 17) (v) | 18) (iv) |
| 19) (ii) | 20) (i) | 21) (iv) | 22) (iii) | 23) (iii) | 24) (iii) |
| 25) (i) | 26) (v) | 27) (iii) | 28) (v) | 29) (iii) | 30) (ii) |
| 31) (iv) | 32) (iv) | 33) (i) | 34) (i) | 35) (iii) | 36) (ii) |
| 37) (i) | 38) (iv) | 39) (v) | 40) (iv) | 41) (iii) | 42) (i) |
| 43) (ii) | 44) (i) | 45) (iv) | 46) (iii) | 47) (ii) | 48) (iv) |
| 49) (i) | 50) (v) | 51) (iii) | 52) (v) | 53) (v) | |