



Class 12 Mathematics | Probability

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. If $P(A \cap B) = 0.2$ and $P(B) = 0.5$, then $P(A \text{ given } B)$ is:

A. 0.7 B. 0.1 C. 0.3 D. 0.4

2. If A, B are independent with probabilities 0.3 and 0.4, $P(A \cap B)$ is:

A. 0.58 B. 0.7 C. 0.1 D. 0.12

3. If A, B are independent and $P(A) = 0.6$, $P(A \text{ given } B)$, for $P(B) > 0$, is:

A. 0.6 B. $P(B)$ C. 0 D. 1

4. Two fair dice are rolled. Given sum 8, probability first die shows 3 is:

A. $1/4$ B. $1/6$ C. $1/5$ D. $1/3$

5. A bag has 3 red and 2 blue balls. Two are drawn without replacement. $P(\text{both red})$ is:

A. $3/10$ B. $9/25$ C. $3/5$ D. $2/5$

6. For two mutually exclusive events with positive probabilities, the events are:

A. Always independent
B. Not independent
C. Complements necessarily
D. Identical

7. If $P(A) = 0.7$ and $P(B \text{ given } A) = 0.4$, $P(A \cap B)$ is:

A. 0.28 B. 0.3 C. 0.175 D. 1.1

8. If $P(A \text{ given } B) = 0.8$, $P(A' \text{ given } B)$ equals:

A. -0.2 B. 0.8 C. 1.8 D. 0.2

9. A box is chosen equally from two boxes with red-ball probabilities $1/4$ and $3/4$. $P(\text{red})$ is:

A. $1/4$ B. $3/4$ C. $3/16$ D. $1/2$

10. In the preceding equal-choice two-box model, $P(\text{second box given red})$ is:

A. $1/2$ B. $1/4$ C. $3/8$ D. $3/4$

11. Machines A and B make 60% and 40% of items, with defect rates 2% and 3%. $P(\text{defective})$ is:

A. 0.05 B. 0.012 C. 0.025 D. 0.024

12. For those machines, $P(A \text{ given defective})$ is:

A. $2/5$ B. $1/2$ C. $3/5$ D. $1/3$

13. If $P(A) = 1/2$, $P(B) = 1/3$ and independent, $P(A \cup B)$ is:

A. $5/6$ B. $2/3$ C. $1/6$ D. $1/2$

14. A fair coin is tossed twice. Given at least one head, probability of two heads is:

A. $1/4$ B. $1/2$ C. $1/3$ D. $2/3$

15. If $P(B) > 0$, $P(A \text{ given } B) = 1$ means:

A. $P(B) = 1$ necessarily
B. $P(A) = 1$ necessarily
C. $P(A \cap B) = P(B)$
D. A and B are independent necessarily

ANSWER KEY — check after completing all 15 questions

1.D 2.D 3.A 4.C 5.A 6.B 7.A 8.D 9.D 10.D 11.D 12.B 13.B 14.C 15.C