

Worksheet: Probability

ISC · Class 12 · Mathematics · 8 questions · 27 marks

Name: _____

Date: _____

Score: _____ / 27

Q1. If $P(A) = 0.5$, $P(B) = 0.4$ and $P(A \text{ and } B) = 0.2$, find $P(A|B)$ and $P(B|A)$. *[2 marks]*

Q2. If A and B are independent with $P(A) = 0.4$ and $P(B) = 0.5$, find $P(A \text{ or } B)$. *[2 marks]*

Q3. Two cards are drawn without replacement from a well shuffled deck of 52. Find the probability that both are kings. *[3 marks]*

Q4. A problem is given to three students whose chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$. Find the probability that the problem is solved. *[3 marks]*

Q5. Bag A has 3 red and 5 black balls; bag B has 4 red and 4 black. A bag is chosen at random and a ball drawn. Find the probability that it is red. *[4 marks]*

Q6. Two machines produce 40% and 60% of output, with defect rates 3% and 2%. An item is found defective. Find the probability it came from the first machine. *[4 marks]*

Q7. A doctor knows a patient has one of three diseases with probabilities 0.5, 0.3 and 0.2. A test is positive with probabilities 0.8, 0.6 and 0.4 respectively. Given a positive test, find the probability of the first disease. *[5 marks]*

Q8. A family has three children. Given that at least one is a boy, find the probability that all three are boys. *[4 marks]*
