Probability 1

Chapter 1

Section 1.5 Mutually exclusive events – The addition rule

Mutually exclusive

OR

$P(R \underset{OR}{\cup} A) = P(R) + P(A)$

$P(G \underset{OR}{\cup} B) = P(G) + P(B) - P(A \cap B)$

$\frac{20}{21} = \frac{9}{21} + \frac{17}{21} - \frac{6}{21}$

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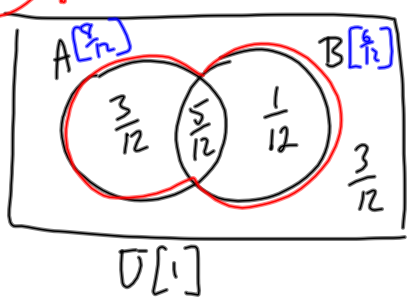
19. For events A and B, it is known that $P(A) = \frac{2}{3}$, $P(A \cup B) = \frac{3}{4}$ and $P(A \cap B) = \frac{5}{12}$. Find $P(B)$.

$\frac{8}{12}$ $\frac{9}{12}$ $\frac{5}{12}$



$P(A \cup B) = P(A) + P(B) - P(A \cap B)$

$P(B) = P(A \cup B) - P(A) + P(A \cap B)$

$= \frac{9}{12} - \frac{8}{12} + \frac{5}{12}$

$= \frac{1}{12} + \frac{5}{12} = \frac{6}{12} = \frac{1}{2}$