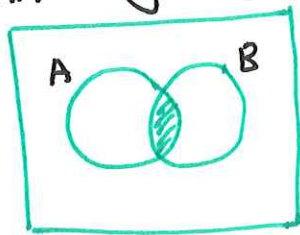


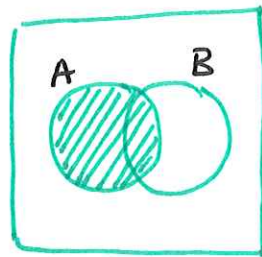
Year 1 Applied

Chapter 5 - Probability

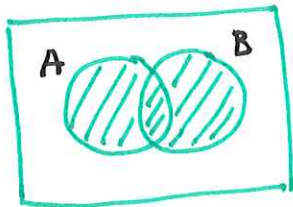
- Venn Diagrams



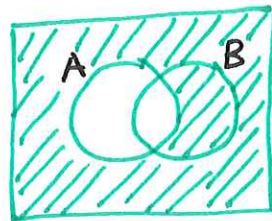
A and B
multiply
probabilities



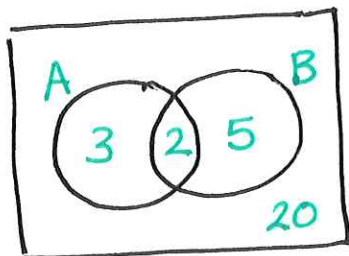
A



A or B
add
probabilities



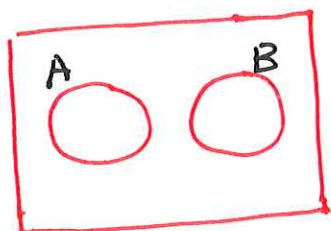
A'



$$P(A) = \frac{3+2}{30} = \frac{5}{30} \quad P(A \text{ and } B) = \frac{3+2+5}{30} = \frac{10}{30}$$

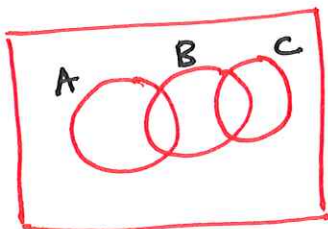
$$P(B) = \frac{2+5}{30} = \frac{7}{30} \quad P(A \text{ and } B) = \frac{2}{30}$$

- mutually Exclusive and Independent Events



mutually exclusive - cannot happen at the same time

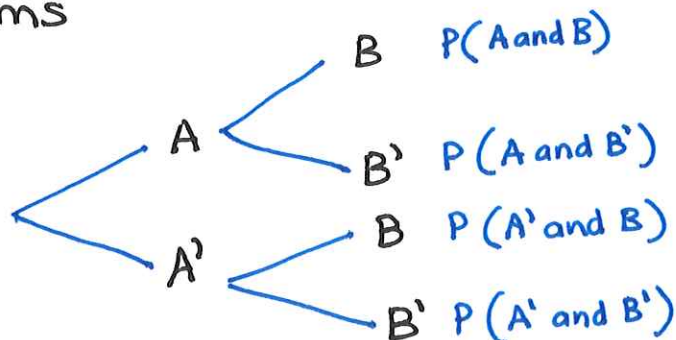
mutually exclusive if $P(A \text{ or } B) = P(A) + P(B)$



Independent events - one event is not affected by another

Independent if $P(A \text{ and } B) = P(A) \times P(B)$

- Tree Diagrams



watch out for
without replacement!