

Additive Rule/ Contingency Table

Experiment: Draw 1 card from a standard 52 card deck. Record Value (A-K), Color & Suit.

- The probabilities associated with drawing an ace and with drawing a black card are shown in the following *contingency table*:

Type	Color		Total
	Red	Black	
Ace	2	2	4
Non-Ace	24	24	48
Total	26	26	52

- Event A = ace Event B = black card
- Therefore the probability of drawing an ace **or** a black card is:

$$P(A \cup B) = P(A) + P(B) - P(A \cap B) = \frac{4}{52} + \frac{26}{52} - \frac{2}{52} = \frac{28}{52}$$