Addition Rule 1: When two events, A and B, are mutually exclusive, the probability that A or B will occur is the sum of the probability of each event.

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

Example: when a dice is rolled, what is the probability of rolling a 3 or a 4?

$$P(3) = \frac{1}{6} \qquad\qquad P(4) = \frac{1}{6} \qquad\qquad P(3 \text{ or } 4) = \frac{1}{6} + \frac{1}{6} = \frac{2}{6} \text{ or } \frac{1}{3}$$

Experiment 1: a dice is rolled, what is the probability of rolling a 2 or a 5?

$P(2) = \underline{\hspace{2cm}}$

$P(5) = \underline{\hspace{2cm}}$

$P(2 \text{ or } 5) = P(2) + P(5)$

$\qquad = \underline{\hspace{1.5cm}} + \underline{\hspace{1.5cm}} = \underline{\hspace{1.5cm}} = \underline{\hspace{1.5cm}}$

Experiment 2: A spinner has 4 equal sectors colored yellow, blue, green, and red. What is the probability of landing on red or blue after spinning this spinner?

$P(\text{red or blue}) = P(\text{red}) + P(\text{blue})$

$\qquad = \underline{\hspace{1.5cm}} + \underline{\hspace{1.5cm}} = \underline{\hspace{1.5cm}} = \underline{\hspace{1.5cm}}$

Experiment 3: Ahmed organizes all of his social media contacts into 3 groups, close friends, acquaintances, and restricted, as follows:

What is the probability if a selected contact is either a friend or acquaintance?

$P(F \text{ or } A) = P(F) + P(A)$

$\qquad = \underline{\hspace{1.5cm}} + \underline{\hspace{1.5cm}} = \underline{\hspace{1.5cm}} = \underline{\hspace{1.5cm}} = \underline{\hspace{1cm}} \%$