

## Addition Law 22

The following events are mutually exclusive. They can't happen at the same time. They have no outcomes in common.  $P(A \text{ and } B) = 0$ .

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

1) A die is rolled. What is the probability that the result will be an odd number or a four?

2) A bag contains five white marbles, seven black marbles and three yellow marbles. Pick one marble. Find the probabilities.

a)  $P(W \text{ or } B)$

b)  $P(W \text{ or } Y)$

c)  $P(B \text{ or } Y)$

3) You have a deck of cards. Pick a card. Give the probabilities.

a)  $P(\text{red card or club})$

b)  $P(\text{heart or spade})$

4) A bag contains black and white marbles. You pick one marble. The probability of picking a black is  $7/16$ . Find the probabilities.

a)  $P(B \text{ or } W)$

b)  $P(W)$

5) A card hand has five hearts, two diamonds, and one club. Pick one card. Find the probabilities.

a)  $P(\text{diamond or club})$

b)  $P(\text{diamond or heart})$

Answers: 1)  $2/3$ , 2)a)  $4/5$ , b)  $8/15$ , c)  $2/3$ , 3)a)  $3/4$ , b)  $1/2$ , 4)a)  $1$ , b)  $9/16$ , 5)a)  $3/8$ , b)  $7/8$ .