

6.4 Compound Events

Events that have more than one probability
"and"

Two types of compound events

→ Replaced
Put back Independent - Second event is not a result of the first
Dependent - Second event is affected by the result of the first

7 blue 3 green 4 black 6 red
5 white marbles are in a bag. If marble is replaced
 $P(\text{blue and red}) = \frac{7}{25} \cdot \frac{6}{25} = \frac{42}{625}$

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

5 boys, 7 girls in a class

$P(\text{boy and girl}) = \frac{5}{12} \cdot \frac{7}{11} = \frac{35}{132}$
dependent

Dependent Event

$P(A \text{ and } B) = P(A) \cdot P(B \text{ after } A)$

In '91 Orlando had an
 $\frac{10}{39}$ probability of getting
the 1 draft pick

In '92 Orlando had an
 $\frac{1}{39}$ probability of getting
the 1 draft pick

$$\frac{10}{39} \cdot \frac{1}{39} = \frac{10}{1521}$$