

Warm-up

Cards (52)

① $P(\underset{4}{Q} \text{ or } \underset{2}{\text{red A}})$

$$\frac{4}{52} = \frac{3}{26}$$

② $P(\underset{2}{\text{black 7}})$

$$\frac{2}{52} = \frac{1}{26}$$

③ Flip 2 coins.

 $P(\text{both tails})$

$$\frac{1}{4}$$

→

c_1	c_2
H	H
H	T
T	H
T	T

10.5 Probability of Independent stuff

- Events have no effect on each other
flip coins, ice cream & temp in Africa

- Probability of both A & B

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

Examples

① ALC fundraiser sell 200 tickets for yardwork and 150 house cleaning. Your aunt buys 5 of each. What is prob. she wins both?

$$P(\text{yard}) = \frac{5}{200} \text{ or } \frac{1}{40} \quad \frac{1}{40} \cdot \frac{1}{30} = \left(\frac{1}{120}\right)$$

$$P(\text{house}) = \frac{5}{150} \text{ or } \frac{1}{30}$$

② A spinner has 10 equal regions 1-10. What prob of 3 spins of perfect squares



Perfect squares: 1, 4, 9

$$\begin{array}{ccc} 1^{\text{st}} & 2^{\text{nd}} & 3^{\text{rd}} \\ \frac{3}{10} & \frac{3}{10} & \frac{3}{10} = \frac{27}{1000} \\ & & \text{or } 2.7\% \end{array}$$

P(Q), then a spade

(a) with replacement

$$\frac{4}{52} \cdot \frac{13}{52}$$

$$\frac{1}{13} \cdot \frac{1}{4} = \frac{1}{52}$$

.019 or 1.9%

W/o replace

(b) Q, then 4

$$\frac{4}{52} \cdot \frac{4}{51}$$

$$= \frac{16}{2652}$$

$$= 0.006$$

$$= .6\%$$