9/7/2005

Name
Address
Phone
High School
Major
Future Plans
My Math Lab

MAT 106 node

montco 412 96
29a) \( P(\text{Red}) = \frac{3}{6} = \frac{1}{2} \)

b) \( P(\text{Green}) = \frac{1}{6} \)

c) \( P(\text{Yellow}) = \frac{2}{6} = \frac{1}{3} \)

d) \( P(\text{Blue}) = \frac{1}{6} \)
\[ P(\text{v not selected}) = 1 \]

\[ = \frac{11}{11} = 1 \]

E is an event

\[ 0 \leq P(E) \leq 1 \]
Roll 1 die once

Let \( A \) = get a # greater than 4

\( \text{not } A = 1, 2, 3, \text{ or } 4 \)

\[
P(A) + P(\text{not } A) = 1
\]

\[
\frac{2}{6} + \frac{4}{6} = \frac{6}{6} = 1
\]
Odds

Let $E$ be an event

odds in favor of $E = \frac{P(E)}{P(\text{not } E)}$

odds against $E = \frac{P(\text{not } E)}{P(E)}$
Ex. Find the odds in favor of drawing an Ace, if one card is drawn from a standard deck.

**Odds in Favor of Ace:**

\[
\text{odds in favor of Ace} = \frac{P(\text{Ace})}{P(\text{not Ace})}
\]

\[
= \frac{4}{52}
\]

\[
= \frac{4}{48} = \frac{1}{12}
\]

**Odds 1:12 in Favor**

**Odds Against an Ace:**

\[
\text{odds against an Ace} = \frac{P(\text{not Ace})}{P(\text{Ace})}
\]

\[
= \frac{48}{52}
\]

\[
= \frac{48}{4} = \frac{12}{1}
\]

**12:1 Odds Against Ace**
Odds against Red = $\frac{P(\text{not Red})}{P(\text{Red})}$

\[ = \frac{\frac{2}{3}}{\frac{1}{3}} \]

\[ = \frac{2}{1} \]

Odds against red are 2:1
Odds in favor of win are 2:7

2 wins for every 7 losses

\[ P(\text{wins}) = \frac{2}{9} \]

\[ P(\text{loses}) = \frac{7}{9} \]
odds against win are 5:2
means For every 5 losses there are 2 wins

P(wins) = \frac{2}{7}

P(loses) = \frac{5}{7}
At a race track we have odds against winning. If the odds are 50:1, then

\[ P(\text{win}) = \frac{1}{51} \]
Friday
12.3 Those assigned