Algebra 1 0.11 Simple Probability and Odds

Find the probability of simple events
Find the odds of simple events

probability $\quad \dfrac{\text{success}}{\text{total}} \qquad \dfrac{1}{6} = P_3$

sample space

tree diagram $\qquad\qquad \dfrac{3}{6} = \dfrac{1}{2} = P_{even}$

Fundamental Counting Principle

odds

number cube (dice)

complementary events

prob: $\dfrac{S}{T} = \dfrac{1}{6}$ S:F
                      1:5

ODDS: number of ways to succeed: number of ways to fail

(related to probability, but not the same)

1 2 3 4 5 6

$\dfrac{1}{6}$

ODDS

A number cube (die) is rolled. Find the odds.

a. Rolling a 1   S : F   1 : 5

   Rolling a 5

   1 : 5

b. Rolling an even number   3 : 3

                            1 : 1

Ex. 2

$\dfrac{7}{28}$

28

A bowl contains 5 red chips, 7 blue chips, 6 yellow chips, and 10 green chips. One chip is randomly drawn.

a. odds of blue $7:21$
                  $1:3$

b. odds of red $5:23$

c. odds of green $10:18$
                   $5:9$

S : F

The odds of an event occurring is the ratio that compares the number of ways and event can occur (success) to the number of ways it cannot occur (failure).
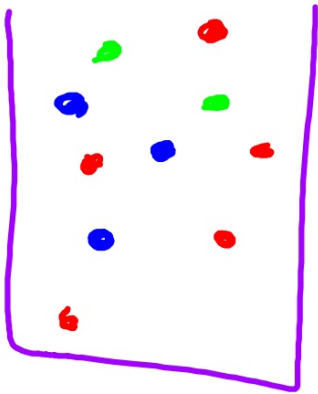
A number cube is rolled.
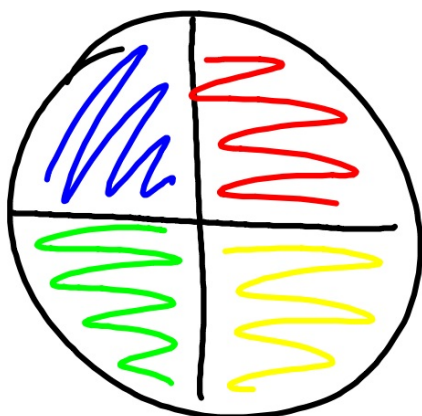Find the odds of rolling a number less than 3.

$2:4$
$1:2$

$$P_{Black} = 0$$

$$P_{Marble} \frac{10}{10} = 1$$

$$P_{Red} = \frac{1}{4}$$

Odds 1:3

Odds against 3:1

$\frac{70}{100}$ 70:30

P-48   54-62
P-36   16-19 all

vowels a e i o u