

M7H

*May 22, 2012*

*Get out your homework*



## 5/22 - Independent Events

Finding the probability of 2 things happening together that are not connected to each other.



(purple, green)

What is the probability of rolling a 5 on the purple die and a 2 on the green one?

$$\frac{1}{36}$$

$$P(5, 2) = \frac{1}{6} \cdot \frac{1}{6}$$

$$P(5) = \frac{1}{6} = \frac{1}{36}$$

$$P(2) = \frac{1}{6}$$

1,1	2,1	3,1	4,1	5,1	6,1
1,2	2,2	3,2	4,2	5,2	6,2
1,3	2,3	3,3	4,3	5,3	6,3
1,4	2,4	3,4	4,4	5,4	6,4
1,5	2,5	3,5	4,5	5,5	6,5
1,6	2,6	3,6	4,6	5,6	6,6

1,1	2,1	3,1	4,1	5,1	6,1
1,2	2,2	3,2	4,2	5,2	6,2
1,3	2,3	3,3	4,3	5,3	6,3
1,4	2,4	3,4	4,4	5,4	6,4
1,5	2,5	3,5	4,5	5,5	6,5
1,6	2,6	3,6	4,6	5,6	6,6

Sample space for rolling two dice.

Find each of these probabilities:

$$P(2,4) = \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$$

$$P(\text{doubles}) = \frac{6}{36} = \frac{1}{6}$$

P(even, odd)=

$$\frac{3}{6} \cdot \frac{3}{6} = \frac{1}{4}$$

P(not 5, 5)=

$$\frac{5}{6} \cdot \frac{1}{6} = \frac{5}{36}$$

P(less than 3, more than 3)=

$$\frac{2}{6} \cdot \frac{2}{6} = \frac{1}{9}$$

Find the given probabilities using the spinner and the coin.



P(red, heads)=

$$\frac{1}{4} \cdot \frac{1}{2} = \frac{1}{8}$$

P(yellow, tails)=

$$\frac{1}{4} \cdot \frac{1}{2} = \frac{1}{8}$$

P(not green, heads)=

$$\frac{3}{4} \cdot \frac{1}{2} = \frac{3}{8}$$

P(blue or yellow, tails)=

$$\frac{2}{4} \cdot \frac{1}{2} = \frac{1}{4}$$

If each letter of the words BUTLER MIDDLE are printed on cards and shuffled, one card is drawn, returned and another is drawn. Find the given probabilities.

$$P(M, T) = \frac{1}{12} \cdot \frac{1}{12} = \frac{1}{144}$$

$$P(\text{vowel, not vowel}) = \frac{1}{3} \cdot \frac{8}{12} = \frac{2}{9}$$

$$P(\text{letter in first word, letter in second word}) = \frac{2}{3} \cdot \frac{8}{12} = \frac{4}{9}$$

# Homework

Blue Probability WS2

Due Today!