MasterMath

Statistics

Dependent and Independent Events

Step on a crack, break your mother's back

Independent Events

Dependent and Independent Events

Independent Events

1/5 = 20%

Dependent Events

1/4 = 25%   0/4 = 0%

Dependent and Independent Events

$P_r = 1/2 = 50\%$

$P_{r+r} = 1/2 * 1/2 = 1/4 = 25\%$

Dependent and Independent Events

$P_r = 2/4 = \frac{1}{2} = 50\%$

$P_{r+r} = \frac{1}{2} * \frac{1}{2} = \frac{1}{4} = 25\%$

$P_r = 1/3 = 33.3\%$

$P_{r+r} = 1/2 * 1/3 = 1/6 = 16.7\%$

Dependent and Independent Events

Probability of Two Independent Events

$$P_{(A + B)} = P_A * P_B$$

Probability of Two Dependent Events

$$P_{(A + B)} = P_A * P_{(B \text{ after } A)}$$

Probability of Three Independent Events

$$P_{(A + B + C)} = P_A * P_B * P_C$$

Dependent and Independent Events

Slide 1

Dependent and Independent Events

YOU TRY IT

Hit your Pause Key, try the problem, then hit your Forward Key to move to the answer.

If I roll a pair of dice, what is the probability that both dice land on a 6? Are these Dependent or Independent Events?

You try it!

Slide 2

Dependent and Independent Events

YOU TRY IT

Independent Events

If I roll a pair of dice, what is the probability that both dice land on a 6? Are these Dependent or Independent Events?

You try it!

$$P = 1/6 \times 1/6 = 1/36 = 2.\overline{7}\%$$

Slide 3

Dependent and Independent Events

YOU TRY IT

Hit your Pause Key, try the problem, then hit your Forward Key to move to the answer.

There are 4 puppies; two are male and two are female. If you randomly pick two puppies, what is the probability that they will both be female? Are these Independent or Dependent Events?

You try it!

Dependent and Independent Events

YOU TRY IT

$$P_{f+f} = 2/4 * 1/3 = 2/12 = 16.\overline{6}\%$$

There are 4 puppies; two are male and two are female. If you randomly pick two puppies, what is the probability that they will both be female? Are these Independent or Dependent Events?

You try it!

Dependent Events

Dependent and Independent Events

YOU TRY IT

Hit your Pause Key, try the problem, then hit your Forward Key to move to the answer.

You randomly choose one of the letter cubes. Without replacing it, you now choose a 2nd letter cube and place it to the right of the 1st letter cube. Then you pick a 3rd letter cube, and place it to the right of the 2nd letter cube. What is the probability that the letter cubes now spell "BIT"?

You try it!

BIRTH

Dependent and Independent Events

YOU TRY IT

$$P_{B+I+T} = 1/5 \times 1/4 \times 1/3 = 1/60 = 1.\overline{6}\%$$

You randomly choose one of the letter cubes. Without replacing it, you now choose a 2nd letter cube and place it to the right of the 1st letter cube. Then you pick a 3rd letter cube, and place it to the right of the 2nd letter cube. What is the probability that the letter cubes now spell "BIT"?

You try it!

BIRTH