

Nov 15-8:24 PM Feb 9-11:33 AM

10.3 Conditional Probability Conditional Probability

The probability that an exemt! occur given that anothervent, has already occurred. Exists when t events antependent.

P(B|A) means "the probability of event B, given eve

Contingency Table

questions.

has had a pet.

1. Find the probability that

a respondent has a pet,

given that the respondent

A two way frequency table. Contains data from two different categories. Can help find conditional prob

10.3 Conditional Probability

Conditional Probability

$$P(B \mid A) = \frac{P(A \text{ and } B)}{P(A)}$$

2. Find the probability that a respondent has never had a

pet, given that the respondent does not have a pet now.

Example: Use the survey results to answer the following

39% have a pet now and have had a pet.

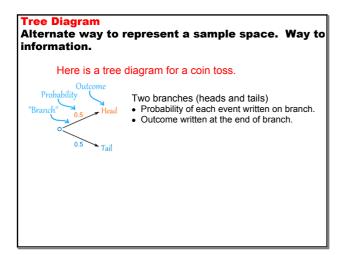
14% do not have a pet now and have

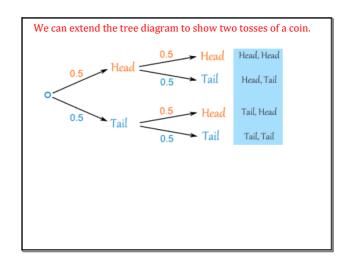
61% do not have a pet now.

never had a pet.

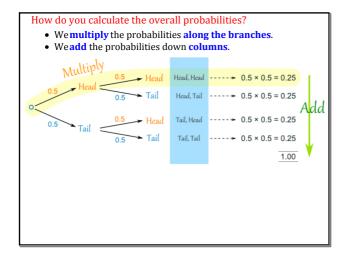
86% have had a pet.

Feb 9-11:33 AM Mar 24-11:27 PM

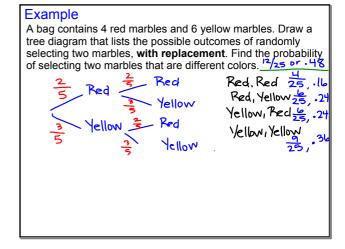




May 1-8:44 AM May 1-8:48 AM

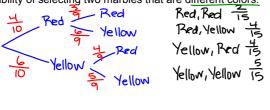


May 1-8:49 AM May 1-8:57 AM



Example

A bag contains 4 red marbles and 6 yellow marbles. Draw a tree diagram that lists the possible outcomes of randomly selecting two marbles, **without replacement**. Find the probability of selecting two marbles that are different colors.



May 1-8:57 AM Apr 5-12:59 PM

Apr 5 12:50 DM

A school system compiled the following information from a

survey it sent to people who were juniors 10 years earlier.

Of the students who graduated high school, 90% are

Of the students who did not graduate from high school,

What is the probability that a person from the junior class 10 years ago graduated from high school and is happy with present job?

What is the probability that a person from the junior class 10 years ago did not graduate and is happy with present job?

(7)

85% of the students graduated from high school

happy with their present jobs.

60% are happy with their present jobs.

Example

A football team has a 70% chance of winning when it doesn't snow, but only a 40% chance of winning when it snows. Suppose there is a 50% chance of snow. Make a tree diagram to find the probability that the team will win.