

Day 2 Examples

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Suppose we walk up to a farmer that has 2 goats for sale. Curious about the gender of the goats, we ask her if they are female. She tells us that at least 1 goat is female. What is the probability that both goats are female?

Trump vs. the world

Suppose a Republican (R) is running against three Democrats (D_1, D_2, D_3).

- ▶ Polls suggest that the probabilities of D_1, D_2, D_3 winning the primary are 0.35, 0.40, 0.25 respectively.
- ▶ Polls also suggest that R has a 40%, 35%, 60% chance of defeating D_1, D_2, D_3 respectively in a general election.

If we assume all these estimates are accurate, then what is the probability that R wins?

second card

A standard poker deck is shuffled and the top card is removed.
What is the probability that the second card is an ace?

Math allergies

The residents of a community are examined for math allergies. Suppose we are given the following information:

- ▶ If a resident is allergic to math, then the probability of a positive result from the examination is 0.98.
- ▶ If a resident is NOT allergic to math, then the probability of a positive result from the examination is 0.15.
- ▶ 5% of the community is allergic to math.

Now, suppose a resident tests positive for being allergic to math. What is the probability that this resident is NOT allergic to math?

Thanks for listening!

Material from today can be found (for a limited time only!) at
`www.math.dartmouth.edu/~mjmusty/mathcamp1.html`