



CS 540 Introduction to Artificial Intelligence

Probability

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Break & Quiz

- **Q 1.1:** We toss a biased coin. If $P(\text{heads}) = 0.7$, then $P(\text{tails}) = ?$
- A. 0.4
- B. 0.3
- C. 0.6
- D. 0.5

Break & Quiz

- **Q 1.2:** There are exactly 3 candidates for a presidential election. We know X has a 30% chance of winning, B has a 35% chance. What's the probability that C wins?
- A. 0.35
- B. 0.23
- C. 0.333
- D. 0.8

Break & Quiz

- **Q 1.3:** What's the probability of selecting a black card or a number 6 from a standard deck of 52 cards?
- A. $26/52$
- B. $4/52$
- C. $30/52$
- D. $28/52$

Break & Quiz

Q 2.1: Back to our joint distribution table:

	Sunny	Cloudy	Rainy
hot	150/365	40/365	5/365
cold	50/365	60/365	60/365

What is the probability the temperature is hot given the weather is cloudy?

- A. $40/365$
- B. $2/5$
- C. $3/5$
- D. $195/365$

Break & Quiz

Q 2.2: Of a company's employees, 30% are women and 6% are married women. Suppose an employee is selected at random. If the employee selected is a woman, what is the probability that she is married?

- A. 0.3
- B. 0.06
- C. 0.24
- D. 0.2

Break & Quiz

Q 3.1: 50% of emails are spam. Software has been applied to filter spam. A certain brand of software can detect 99% of spam emails, and the probability for a false positive (a non-spam email detected as spam) is 5%. Now if an email is detected as spam, then what is the probability that it is in fact a nonspam email?

- A. $5/104$
- B. $95/100$
- C. $1/100$
- D. $1/2$

Break & Quiz

Q 3.2: A fair coin is tossed three times. Find the probability of getting 2 heads and a tail

- A. $1/8$
- B. $2/8$
- C. $3/8$
- D. $5/8$