

1. A survey of local car dealers revealed that 64% of all cars sold last month had CD players, 28% had alarm systems, and 22% had both CD players and alarm systems.
 - a. What is the probability one these cars selected at random had neither a CD player nor an alarm system?
 - b. What is the probability that a car had a CD player unprotected by an alarm system?
 - c. What is the probability a car with an alarm system had a CD player?
 - d. Are having a CD player and an alarm system disjoint events? Explain.

2. According to the American Pet Products Manufacturers Association (APPMA) 2003-2004 National Pet Owners Survey, 39% of U.S. households own at least one dog and 34% of U.S. households own at least one cat. Assume that 60% of U.S. households own a cat or a dog.
 - a. What is the probability that a randomly selected U.S. household owns neither a cat nor a dog?
 - b. What is the probability that a randomly selected U.S. household owns both a cat and a dog?
 - c. What is the probability that a randomly selected U.S. household owns a cat if the household has a dog?

3. All airline passengers must pass through security screenings, but some are subjected to additional searches as well. Some travelers who carry laptops wonder if that makes them more likely to be searched. Data for 420 passengers aboard a cross-country flight are summarized in the table shown.

	Searched?		
	Yes	No	Total
Laptop	30	42	72
No Laptop	145	203	348
Total	175	245	420

- a. Find the probability that a randomly selected passenger is searched.
- b. Find the probability that a randomly selected passenger has a laptop and is searched.
- c. Find the probability that a randomly selected passenger with a laptop is searched.
- d. Does it appear that being subjected to an additional search is independent of carrying a laptop computer? Explain.

