

- c) What's the probability that a man with high blood pressure has high cholesterol?  
 d) What's the probability that a man has high blood pressure if it's known that he has high cholesterol?
10. **Death penalty.** The table shows the political affiliations of American voters and their positions on the death penalty.

		Death Penalty	
		Favor	Oppose
Party	Republican	0.26	0.04
	Democrat	0.12	0.24
	Other	0.24	0.10

- a) What's the probability that a randomly chosen voter favors the death penalty?  
 b) What's the probability that a Republican favors the death penalty?  
 c) What's the probability that a voter who favors the death penalty is a Democrat?  
 d) A candidate thinks she has a good chance of gaining the votes of anyone who is a Republican or in favor of the death penalty. What portion of the voters is that?

11. **Global survey, take 2.** Look again at the table summarizing the Roper survey in Exercise 5.

- a) If we select a respondent at random, what's the probability we choose a person from the United States who has done post-graduate study?  
 b) Among the respondents who have done post-graduate study, what's the probability the person is from the United States?  
 c) What's the probability that a respondent from the United States has done post-graduate study?  
 d) What's the probability that a respondent from China has only a primary-level education?  
 e) What's the probability that a respondent with only a primary-level education is from China?

12. **Birth order, take 2.** Look again at the data about birth order of Intro Stats students and their choices of colleges shown in Exercise 6.

- a) If we select a student at random, what's the probability the person is an Arts and Sciences student who is a second child (or more)?  
 b) Among the Arts and Sciences students, what's the probability a student was a second child (or more)?  
 c) Among second children (or more), what's the probability the student is enrolled in Arts and Sciences?  
 d) What's the probability that a first or only child is enrolled in the Agriculture College?  
 e) What is the probability that an Agriculture student is a first or only child?

13. **Sick kids.** Seventy percent of kids who visit a doctor have a fever, and 30% of kids with a fever have sore throats. What's the probability that a kid who goes to the doctor has a fever and a sore throat?

14. **Sick cars.** Twenty percent of cars that are inspected have faulty pollution control systems. The cost of repairing a pollution control system exceeds \$100 about 40% of the time. When a driver takes her car in for inspection, what's the probability that she will end up paying more than \$100 to repair the pollution control system?

15. **Cards.** You are dealt a hand of three cards, one at a time. Find the probability of each of the following.

- 3, 8 a) The first heart you get is the third card dealt.  
 b) Your cards are all red (that is, all diamonds or hearts).  
 c) You get no spades.  
 [d) You have at least one ace.]

16. **Another hand.** You pick three cards at random from a deck. Find the probability of each event described below.

- 3, 8 a) You get no aces.  
 b) You get all hearts.  
 c) The third card is your first red card.  
 [d) You have at least one diamond.]

17. **Batteries.** A junk box in your room contains a dozen old batteries, five of which are totally dead. You start picking batteries one at a time and testing them. Find the probability of each outcome.

- 3, 8 a) The first two you choose are both good.  
 b) At least one of the first three works.  
 c) The first four you pick all work.  
 d) You have to pick 5 batteries in order to find one that works.

18. **Shirts.** The soccer team's shirts have arrived in a big box, and people just start grabbing them, looking for the right size. The box contains 4 medium, 10 large, and 6 extra-large shirts. You want a medium for you and one for your sister. Find the probability of each event described.

- 3, 8 a) The first two you grab are the wrong sizes.  
 b) The first medium shirt you find is the third one you check.  
 c) The first four shirts you pick are all extra-large.  
 [d) At least one of the first four shirts you check is a medium.]

19. **Eligibility.** A university requires its biology majors to take a course called BioResearch. The prerequisite for this course is that students must have taken either a Statistics course or a computer course. By the time they are juniors, 52% of the Biology majors have taken Statistics, 23% have had a computer course, and 7% have done both.

- a) What percent of the junior Biology majors are ineligible for BioResearch?  
 b) What's the probability that a junior Biology major who has taken Statistics has also taken a computer course?  
 c) Are taking these two courses disjoint events? Explain.  
 d) Are taking these two courses independent events? Explain.

20. **Benefits.** Fifty-six percent of all American workers have a workplace retirement plan, 68% have health insurance, and 49% have both benefits. We select a worker at random.