

Name _____ Date _____

Day 4 – Conditional Probability

A random survey was taken to gather information about grade level and car ownership status of students at a school. This table shows the results of the survey. Write your answer as a reduced fraction.

Car Ownership by Grade			
	Owns a Car	Does Not Own a Car	TOTAL
Junior	6	10	16
Senior	12	8	20
TOTAL	18	18	36

- _____ 1. Find the probability that a randomly selected student will be a junior, given that the student owns a car.

- _____ 2. Find the probability that a randomly selected student will own a car, given that the student is a senior.

The table below shows numbers of registered voters by age in the United States in 2004 based on the census. Find each probability in decimal form, 2 places.

Age	Registered Voters (in thousands)	Not Registered to Vote (in thousands)	
18–24	14,334	13,474	
25–44	49,371	32,763	
45–64	51,659	19,355	
65 and over	26,706	8,033	

- _____ 3. Find the probability that a randomly selected person is registered to vote, given that the person is between the ages of 18 and 24.

- _____ 4. Find the probability that a randomly selected person is not registered to vote, given that they are 65 and over.

- _____ 5. Find the probability that a randomly selected person is between the ages of 45 and 64 and is not registered to vote.

A faculty advisor at Ridge High School surveyed 100 students about their preference for a social event. Of the 100 students surveyed, 50 were tenth graders and 50 were eleventh graders. Of the tenth graders, 30 chose a bowling party and 20 chose a dance. Of the eleventh graders, 20 chose a bowling party and 30 chose a dance.

6. Make a two way frequency table to represent the data.

	Bowling (B)	Dance (D)	
10 th graders (T)			
11 th graders (E)			

_____ 7. Find $P(B)$. Write your answer as a reduced fraction.

_____ 8. Find $P(B | T)$. Write your answer as a reduced fraction.

_____ 9. Based on your answers on #7 & 8, do you think that the probability of liking bowling is dependent (different answers) on whether a student is in the 10th or 11th grade?

After growing tired of squinting while driving, Dwayne went shopping for a pair of sunglasses. He tried on glasses with different frames and lenses. He tried on 15 pairs of glasses, 8 that were cat eye frames and 7 that were browline frames. 2 of the cat eye frames were polarized lenses. He also tried on 10 regular lenses.

10. Make a two-way frequency table to represent the data.

	Polarized (P)	Regular (R)	
Cat Eye (C)			
Browline (B)			

_____ 11. What is the probability that a randomly selected pair of sunglasses has regular lenses, given that the pair of sunglasses has cat eye frames?