Name _____ Date _____

Day 4 – Conditional Probability

The frequencies of the marbles in a bag are shown in the table.   Write answers as reduced fractions.

_____ 1. Find P(small)

_____ 2. Find P(green | large)

	GREEN	BLUE
LARGE	2	4
SMALL	8	12

A town planning committee is considering a new system for public transit. Residents of the town were randomly selected to answer two questions: "Do you work less than 5 miles from home?" and "Would you use the new system to get to work, if it were available?" The results are shown in the table below. Write answers as reduced fractions.

		Work less than 5 miles from home?	
		YES	NO
Use new system?	YES	24	32
	NO	44	20

_____ 3. If residents work less than 5 miles from home, what is the probability that they would use the new system?

_____ 4. If residents are willing to use the new system, what is the probability that they don't work less than 5 miles from home?

The table shows the results of a poll of randomly selected high school students who were asked if they prefer to hear all school announcements in the morning or afternoon. Write answers as reduced fractions.

	Underclassmen	Upperclassmen
Morning	8	14
Afternoon	18	10

_____ 5. Find P(Morning | Underclassmen)

_____ 6. Find P(Afternoon | Upperclassmen)

The table shows the results of a customer satisfaction survey for a cellular service provider, by location of the customer. In the survey, customers were asked whether they would recommend a plan with the provider to a friend. Write answers as reduced fractions.

	Arlington	Towson	Parkville
Yes	40	35	41
No	18	10	6

_____ 7. Find P(Yes)

_____ 8. Find P (Yes | Arlington)

_____ 9. Are the 2 probabilities the same?

Roberto is the owner of a car dealership. He is assessing the success rates of his top three sales people in order to offer one of them a promotion. Over two months, for each attempted sale, he records whether the sales person made a successful sale or not. The results are shown in the cart below. Write answers as reduced fractions.

	Successful	Unsuccessful
Becky	6	6
Raul	4	5
Darrell	6	9

_____ 10. Find P(Successful | Becky)

_____ 11. Find P(Unsuccessful | Darrell)

Mrs. Koehler surveyed 430 men and 200 women about their vehicles. Of those surveyed, 160 men and 85 women said they own a blue vehicle.   Write answers as reduced fractions.

_____ 12. If a randomly chosen person is a man, what is the probability of that person having a blue car?

	Blue	Not Blue
Men		
Women		

_____ 13. P(Blue)'

_____ 14. P(Women | Not Blue)

_____ 15. P(Men ∩ Not Blue)