Name: _____ Date: _____ Period: _____

Conditional Probability Worksheet (12-2)

1. Use the table below to find each probability for a randomly selected employee:

EDUCATION AND SALARY OF EMPLOYEES			
	Under $20,000	**$20,00 to $30,000**	**Over $30,000**
Less than high school	69	36	2
High School	112	98	14
Some College	102	193	143
College	13	173	245

a) *P*(employee has less than a high school education)

b) *P*(employee earns under $20,000)

c) *P*(employee earns over $30,000 and has less than a high school education)

d) *P*(employee earns under $20,000 and has a college degree)

e) *P*(employee earns over $30,000 | has only high school education)

f) *P*(employee has less than high school education | earns over $30,000)

2. Use the table to find each probability for a randomly chosen student.

a) *P*(male)

b) *P*(male or majors in Chemistry)

c) *P*(majors in Physics | male)

GENDER AND COLLEGE MAJORS			
	Biology	**Physics**	**Chemistry**
Male	40	16	35
Female	15	24	20

3. Andrea is a very good student. The probability that she studies and passes her mathematics test is $17/20$. If the probability that Andrea studies is $15/16$, find the probability that Andrea passes her mathematics test, given that she has studied.

4. The probability that Janice smokes is $\frac{3}{10}$. The probability that she smokes and develops lung cancer is $\frac{4}{15}$. Find the probability that Janice develops lung cancer, given that she smokes.

5. The probability that Sue will go to Mexico in the winter and to France in the summer is 0.40. The probability that she will go to Mexico in the winter is 0.60. Find the probability that she will go to France this summer, given that she just returned from her winter vacation in Mexico.

9. High school students in one school chose their favorite leisure activity. Find each probability. Round to the nearest tenth of a percent.

Favorite Leisure Activities

	Sports	Hiking	Reading	Texting	Shopping	Other
Female	39	48	85	62	71	29
Male	67	58	76	54	68	39

a) *P*(sports | female)

b) *P*(female | sports)

c) *P*(reading | male)

d) *P*(male | reading)

e) *P*(hiking | female)

f) *P*(hiking | male)

g) *P*(male | shopping)

h) *P*(female | shopping)

10. The senior class is 55% female, and 32% are females who play a competitive sport. Find the probability that a student plays a competitive sport, given that the student is female.