Secondary II
9-6 Conditional Probability

Name_____
Period_____

A bag contains 8 red disks, 9 yellow disks, and 5 blue disks. Two consecutive draws are made from the bag without replacement of the first draw. Find the probability of each event.

1. red first, red second

2. yellow first, yellow second

3. red first, blue second

4. blue first, red second

5. yellow first, blue second

6. blue first, blue second

Two number cubes are rolled, and the first cube shows a 5. Find the probability of each event below for the two cubes.

7. a sum of 9

8. two odd numbers

9. a sum of 7 or 9

For one roll of a number cube, let A be the event "even" and let B be the event "2." Find each probability.

10a. P(A)

b. P(A and B)

c. P(B|A)

11a. P(B)

b. P(B and A)

c. P(A|B)

For one roll of a number cube, let A be the event "odd" and let B be the event "1 or 3." Find each probability.

12a. P(A)

b. P(A and B)

c. P(B|A)

Age	Number of persons (in thousands)				
	Total in age group	Never married	Married	Widowed	Divorced
18 to 19	7016	6643	357	2	13
20 to 24	18,142	13,372	4407	17	347
25 to 29	19,401	8373	9913	23	1090
30 to 34	21,988	5186	14645	80	2077
35 to 39	22,241	3649	15664	155	2773
40 to 44	20,094	2271	14779	205	2838
45 to 54	30,694	2173	23465	808	4248
55 to 64	20,756	961	15640	1680	2474
65 to 74	18,214	750	12120	4045	1299
75 and older	13,053	561	5670	6346	473
Total	191,599	43,939	116,660	13,361	17,632

Suppose that the person were chosen at random from the population in 1995. Find the probability of each event.

13. The person is married, given that the person is 20 to 24 years old.

14. The person is married, given that the person is 20 to 29 years old.

15. The person is divorced, given that the person is 20 to 29 years old.

16. The person is divorced, given that the person is 30 – 39 years old.

17. The person has never been married, given that the person is 20 to 29 years old.

18. The person has never been married, given that the person is 30 to 44 years old.

Answer key:

1. $\frac{4}{33}$

3. $\frac{20}{231}$

5. $\frac{15}{154}$

7. $\frac{1}{6}$

9. $\frac{1}{3}$

11. a) $\frac{1}{6}$
    b) $\frac{1}{6}$
    c) 1

13. 24.3%

15. 3.8%

17. 57.9%