

9.3 Conditional Probability Worksheet

58-72

The table shows the outcome of car accidents in Florida for a recent year by whether or not the driver wore a seat belt. Use the data to solve Exercises 57-60. Express probabilities as fractions and as decimals rounded to three places.

CAR ACCIDENTS IN FLORIDA

	Wore Seat Belt	No Seat Belt	Total
Driver Survived	412,368	162,527	574,895
Driver Died	510	1601	2111
Total	412,878	164,128	577,006

Source: Alan Agresti and Christine Franklin, *Statistics*, Prentice Hall, 2007

58. Find the probability of not surviving a car accident, given that the driver did not wear a seat belt.
59. Find the probability of wearing a seat belt, given that a driver survived a car accident.
60. Find the probability of not wearing a seat belt, given that a driver did not survive a car accident.

In Exercises 61-72, we return to the table showing the distribution, by marital status and gender, of the 212.5 million Americans ages 18 or older.

MARITAL STATUS OF THE U.S. POPULATION, AGES 18 OR OLDER, IN MILLIONS

	Never Married	Married	Widowed	Divorced	Total
Male	28.6	62.1	2.7	9.0	102.4
Female	23.3	62.8	11.3	12.7	110.1
Total	51.9	124.9	14.0	21.7	212.5

Source: U.S. Census Bureau

If one person is selected from the population described in the table at the bottom of the previous column, find the probability, expressed as a decimal rounded to three places, that the person

61. is not divorced.
62. is not widowed.
63. is widowed or divorced.
64. had never been married or is divorced.
65. is male or divorced.
66. is female or divorced.
67. is male, given that this person is divorced.
68. is female, given that this person is divorced.
69. is widowed, given that this person is a woman.
70. is divorced, given that this person is a man.
71. had never been married or is married, given that this person is a man.
72. had never been married or is married, given that this person is a woman.