

## Assignment 2

### Exercise 1

A survey of grocery stores in the Southeast revealed 40 percent had a pharmacy, 50 percent had a floral shop, and 70 percent had a deli. Suppose 10 percent of the stores have all three departments, 30 percent have both a pharmacy and a deli, 25 percent have both a floral shop and deli, and 20 percent have both a pharmacy and floral shop.

- a. What is the probability of selecting a store at random and finding it has both a pharmacy and a floral shop?
- b. What is the probability of selecting a store at random and finding it has both a pharmacy and a deli?
- c. Are the events “select a store with a deli” and “select a store with a pharmacy” mutually exclusive?
- d. What is the name given to the event of “selecting a store with a pharmacy, a floral shop, and a deli?”
- e. What is the probability of selecting a store that does *not* have all three departments?

### Exercise 2

The screen size for 23 LCD televisions is given below. Make a stem-and-leaf display of this variable.

46	52	46	40	42	46	40	37	46	40	52	32	37	32	52
40	32	52	40	52	46	46	52							

### Exercise 3

Brooks Insurance Inc. wishes to offer life insurance to men age 60 via the Internet. Mortality tables indicate the likelihood of a 60-year-old man surviving another year is .98. If the policy is offered to five men age 60:

- a. What is the probability all five men survive the year?
- b. What is the probability at least one does not survive?

### Exercise 4

Determine the mean and the standard deviation of the following frequency distribution.

Class	Frequency
20 up to 30	7
30 up to 40	12
40 up to 50	21
50 up to 60	18
60 up to 70	12

### Exercise 5

The American Society of PeriAnesthesia Nurses is a national organization serving nurses practicing in ambulatory surgery preanesthesia and postanesthesia care. The organization consists of 40 components, which are listed below.

State/Region	Membership	State/Region	Membership
Alabama	95	Illinois	562
Arizona	399	Indiana	270
Maryland, Delaware, DC	531	Iowa	117
Connecticut	239	Kentucky	197
Florida	631	Louisiana	258
Georgia	384	Michigan	411
Hawaii	73	Massachusetts	480
			<i>(continued)</i>

State/Region	Membership	State/Region	Membership
Maine	97	California	1,165
Minnesota, Dakotas	289	New Mexico	79
Missouri, Kansas	282	Pennsylvania	575
Mississippi	90	Rhode Island	53
Nebraska	115	Colorado	409
North Carolina	542	South Carolina	237
Nevada	106	Texas	1,026
New Jersey, Bermuda	517	Tennessee	167
Alaska, Idaho, Montana, Oregon, Washington	708	Utah	67
New York	891	Virginia	414
Ohio	708	Vermont, New Hampshire	144
Oklahoma	171	Wisconsin	311
Arkansas	68	West Virginia	62

- Find the mean, median, and standard deviation of the number of members per component.
- Find the coefficient of skewness. What do you conclude about the shape of the distribution of component size?
- Determine the first and third quartiles.
- Develop a box plot. Are there any outliers? Which components are outliers? What are the limits for outliers?