

## Day 6

1. The table at right shows recent composite ACT scores. Determine whether the data is positively skewed, negatively skewed or approximately normally distributed.

| ACT Score | Percent of Students |
|-----------|---------------------|
| 33-36     | 1                   |
| 28-32     | 9                   |
| 24-27     | 19                  |
| 20-23     | 29                  |
| 16-19     | 27                  |
| 13-15     | 12                  |

2. The table shows the age distribution for people living in the United States as determined by the U.S. Census Bureau. Determine whether the distribution is positively skewed, negatively skewed or approximately normally.

| Age   | Percent |
|-------|---------|
| 0-19  | 28.7    |
| 20-39 | 29.3    |
| 40-59 | 25.5    |
| 60-79 | 13.3    |
| 80-99 | 3.2     |
| 100+  | 0.0     |

*For problems #3 – 5, draw the normal curve and label the mean and  $\pm 1, 2, 3$  standard deviations from the mean. Then answer the questions.*

3. A vending machine usually dispenses about 8 ounces of coffee. The actual amount varies normally with a standard deviation of 0.3 ounces.
- What percent of the time will you get more than 8 ounces of coffee?
  - What percent of the time will you get more than 8 ounces of coffee?
  - What percent of the time will you get between 7.4 and 8.6 ounces?
4. The size of CDs made by a company varies normally with a mean of 120 millimeters and a standard deviation of 1 mm.
- What percent of CDs would you expect to be greater than 120 mm?
  - If the company manufactures 1000 CDs per hour, about how many of the CDs made in one hour will be between 119 and 122 mm?
  - If the CDs are made for drives which are 122 millimeters wide, about how many CDs per hour will be too large to fit in the drive?
5. The shelf life of a particular snack chip is normally distributed with a mean of 180 days and a standard deviation of 30 days.
- About what percent of chips will last between 150 and 210 days?
  - About what percent of chips will last between 180 and 210 days?
  - About what percent of chips will last less than 90 days?
  - About what percent of chips will last more than 210 days?