**Descriptive Statistics Exercise**

**Descriptive Statistics**

1. Answer the following questions using the table and data below:
2. What is the mean age of this sample? What is the standard deviation?
3. Create a frequency distribution table for denomination.

|  |
| --- |
| **Denomination** |
|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Episcopal | 1 | 5.0 | 5.0 | 5.0 |
| Lutheran | 2 | 10.0 | 10.0 | 15.0 |
| Presbyterian | 2 | 10.0 | 10.0 | 25.0 |
| Other Mainline Protestant | 1 | 5.0 | 5.0 | 30.0 |
| Baptist | 3 | 15.0 | 15.0 | 45.0 |
| Other Evangelical Protestant | 3 | 15.0 | 15.0 | 60.0 |
| Pentecostal | 1 | 5.0 | 5.0 | 65.0 |
| Charismatic | 3 | 15.0 | 15.0 | 80.0 |
| Non-Denominational | 3 | 15.0 | 15.0 | 95.0 |
| Other | 1 | 5.0 | 5.0 | 100.0 |
| Total | 20 | 100.0 | 100.0 |  |

1. What is the percentage of people who identify themselves as Baptist in this sample?
2. What is the mode of church attendance?

**The mode of church attendance is 5, twice a week.**

The table below presents data for a sample of people who completed a religious survey.

|  |  |  |  |
| --- | --- | --- | --- |
| **Age** | **Gender** | **Denomination** | **Church Attendance** |
| 56 | 1 | 7 | 4 |
| 46 | 2 | 6 | 5 |
| 49 | 2 | 6 | 5 |
| 49 | 1 | 1 | 5 |
| 27 | 2 | 9 | 5 |
| 51 | 1 | 4 | 2 |
| 47 | 2 | 2 | 3 |
| 67 | 1 | 5 | 4 |
| 49 | 2 | 2 | 6 |
| 33 | 1 | 12 | 6 |
| 55 | 2 | 9 | 5 |
| 40 | 1 | 7 | 5 |
| 62 | 1 | 8 | 6 |
| 47 | 2 | 6 | 3 |
| 56 | 2 | 9 | 5 |
| 22 | 1 | 10 | 2 |
| 50 | 2 | 4 | 5 |
| 51 | 1 | 10 | 6 |
| 50 | 1 | 7 | 6 |
| 43 | 1 | 10 | 3 |

In this table, the numbers in the gender, denomination, and church attendance columns represent the following:

**Gender**

1. Male
2. Female

**Denomination**

1. Episcopal
2. Lutheran
3. Methodist
4. Presbyterian
5. Other Mainline Protestant
6. Baptist
7. Other Evangelical Protestant
8. Pentecostal
9. Charismatic
10. Non-Denominational
11. Catholic
12. Other

**Church Attendance**

1. Less than once a month
2. Once a month
3. A few times a month
4. Once a week
5. Twice a week
6. Three or more times a week
7. The results of a recent survey indicate that the average new car costs $23,000, with a standard deviation of $3,500. The price of cars is normally distributed.
8. What is a Z score for a car with a price of $33,000?
9. What is a Z score for a car with a price of $30,000?
10. At what percentile rank is a car that sold for $30,000?
11. In one elementary school, 200 students are tested on the subjects of math and English. The table below shows the mean and standard deviation for each subject.

|  |  |  |
| --- | --- | --- |
| **Subject** | **Mean** | **SD** |
| **Math** | 67 | 9.58 |
| **English** | 78 | 12.45 |

One student’s math score was 70 and the same student’s English score was 84. On which exam did the student do better?

1. Suppose you administered an anxiety test to a large sample of people and obtained normally distributed scores with a mean of 45 and a standard deviation of 4. Do not use the web calculator to answer the following questions. Instead, use the Z distribution table below and Appendix A in the Jackson text.
2. If Andrew scored 45 on this test, what is his Z score?
3. If Anna scored 30 on this test, what is her Z score?
4. If Bill’s Z score was 1.5, what is his real score on this test?
5. There are 200 students in a sample. How many of these students will have scores that fall under the score of 41?



**Caption:** The Normal Distribution Curve.

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