MATH 361 Homework for Weeks # 1 and 2

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Section 1-2 5-15 odd, 29

1. **Statistic** (A sampling [48 flights] is taken as a subset of the entire population [all flights])

1. **Parameter** (The total of all the characteristic housing units in the US is a parameter.)
2. **Statistic** (A sampling [400 baby’s weights] is taken as a subset of the entire population [all baby’s weights].)
3. **Parameter** (The total of all the Titanic’s passengers is a parameter.)
4. **Continuous** (The weights shown in the data table are whole numbers, but weight measurements are not discrete – they are continuous).
5. **Discrete** (The number of cars counted for service is not continuous. It is discrete.)
6. **Nominal** (The jersey numbers are nominal labels, their values are not relevant to calculations such as average, and such a calculation is irrelevant in statistics.)

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Section 1-3 5-25 odd

1. The was a **convenience** sampling. Only those people who belonged to the ontology online group were sampled, and it was left up to them to choose on their own whether to respond to the survey. Because of this approach, **the results are likely to be adversely affected**.

1. The percentage of those responding was **14%** (700/5000\*100%). **This value could be considered low considering the inferior sampling method, but it is still a reasonable response. The problem with low response is that it is not necessarily representative of the population**.
2. The sampling method used for cormorant density was **systematic** since the sample data was collected at 20km intervals.
3. The UFO poll used a **random** sampling method, since the 1114 American 18-year old’s telephone numbers were selected at random.
4. The three classes were **cluster** sampled randomly and then each class was surveyed.
5. The author used the **stratified** method of sampling by choosing three categories and then randomly selecting 5 books from each category to find the number of pages in the books.
6. Since the subjects of the Lipitor testing were assigned to the different groups and sampled randomly, so this is **random** sampling.
7. The respondents only responded by their own choice, so this was a **convenience** sampling.
8. Since there was no intervention by USA Today, the survey was an **observational** study.
9. The drinking and driving study would be **experimental**, since the researcher plans to compare two groups with and without alcohol consumption.
10. Since the program managers want to restrict their study to only New York City, increasing the number of drivers in the study sixfold (500 to 3000) will not overcome the bias introduced from not sampling the entire country. So, this is an **experimental** study in the sense that the experiment was carried out, but it seems more **observational** because of the choice to restrict the study to only New York City.

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Section 2.1 8,10,11,12

1. Class Widths: **100** ~ (599-100) / 5

Class Midpoints: **149.5** (100 + 199) / 2

**249.5** (200 + 299) / 2

**349.5** (300 + 399) / 2

**449.5** (400 + 499) / 2

**549.5** (500 + 599) / 2

Class Boundaries:  **99.5** (100 – 0.5)

**199.5** (200 – 0.5)

**299.5** (300 – 0.5)

**399.5** (400 – 0.5)

**499.5** (500 – 0.5)

**599.5** (600 – 0.5)

# Individuals: **147** (25 + 92 + 28 + 0 + 2)

1. The Best Actor frequency distribution is **not a normal distribution**. It is skewed right.
2. **This table** shows the frequency distribution of eruption durations for the Old Faithful geyser in Yellowstone National Park. This is **not a normal distribution**. It is skewed left.

|  |  |
| --- | --- |
| **Eruption Duration** (seconds) | **Frequency** |
| 125 – 149 | 1 |
| 150 – 174 | 0 |
| 175 – 199 | 0 |
| 200 – 224 | 3 |
| 225 – 249 | 34 |
| 250 – 274 | 12 |

1. **This table** sows Frequency distribution for F-Scale Tornados in the United States.

This is **not a normal distribution**. It is skewed right.

|  |  |
| --- | --- |
| **Tornado F-Scale Intensity** | **Frequency** |
| 0 | 24 |
| 1 | 16 |
| 2 | 2 |
| 3 | 2 |
| 4 | 1 |

Section 2.3,2.4 Graphing assignment

See other attached document for graphing assignment.