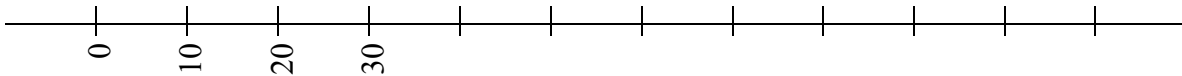


3. (5 pts) What are the 5-Number Summary numbers for the 2016 Tehama Fruits and Nuts Crop Report data?

| Minimum | Quartile 1 | Median | Quartile 3 | Maximum |
|---------|------------|--------|------------|---------|
| | | | | |

4. (2 pts) Construct a box plot for the data. The labeling of the number line has been started for you.



5. (5 pts) Using the interquartile range (IQR), determine if there are any outliers in this data.

| Find the interquartile range (IQR) | Calculate $IQR \times 1.5$ | Calculate $Q_1 - (IQR \times 1.5)$ | Calculate $Q_3 + (IQR \times 1.5)$ | List any outliers |
|------------------------------------|----------------------------|------------------------------------|------------------------------------|-------------------|
| | | | | |

Formulas: I. $p = \frac{x + 0.5y}{n} \cdot 100$

II. $i = \frac{k(n+1)}{100}$

x = the number of values below the data value of interest

n = the number of data values in the list

y = the number of values equal to the data value of interest

k = the percentile of interest

6. (4 pts.) Complete the table:

| Data value (Crop) Choose integer data value just above decimal value. | Percentile Round to whole number |
|---|--|
| Olive Oil total value | |
| | 40 th percentile |
| | 95 th percentile |
| Almond total value | |

7. (6 pts) The following is a frequency distribution of the heights of 224 redwood trees in a certain forest.

Complete the table:

| Height (in feet) | Midpoint | Frequency | Relative Frequency | Cumulative Relative Frequency | Midpoint \times Frequency |
|------------------|----------|-----------|--------------------|-------------------------------|-----------------------------|
| 70 – 80 | | 1 | | | |
| 80 – 90 | | 9 | | | |
| 90 – 100 | | 25 | | | |
| 100 – 110 | | 60 | | | |
| 110 – 120 | | 74 | | | |
| 120 – 130 | | 55 | | | |

8. (4 pts) Complete the table using the redwood tree heights from above:

| Mean (to nearest tenth) | Median | Mode | This data is: |
|----------------------------|--------|------|--|
| | | | (Circle one) <ul style="list-style-type: none"> • skewed left • skewed right • symmetric |

9. (4 pts) Complete the table:

| Data value (height) | Percentile |
|---------------------|-----------------------------|
| | 5 th percentile |
| | 75 th percentile |

10. (2 pts) Five chicken owners randomly selected at the Red Bluff Agriculture Conference were asked how many chickens they own and five chicken owners at the Chico Agriculture Conference were asked the same. Their responses are shown below.

| Number of Chico Owned | |
|-----------------------|-------|
| Red Bluff | Chico |
| 10 | 10 |
| 35 | 30 |
| 60 | 80 |
| 95 | 105 |
| 115 | 115 |
| | |

Mean:

11. (16 pts) Determine the population standard deviation for each by completing the following tables.

| Red Bluff | $(X - \mu)^2$ |
|--|---------------|
| 10 | |
| 35 | |
| 60 | |
| 95 | |
| 115 | |
| $\Sigma(X - \mu)^2 =$ | |
| $\frac{\Sigma(X - \mu)^2}{N} =$ | |
| $\sqrt{\frac{\Sigma(X - \mu)^2}{N}} =$ | |

| Chico | $(X - \mu)^2$ |
|--|---------------|
| 10 | |
| 30 | |
| 80 | |
| 105 | |
| 115 | |
| $\Sigma(X - \mu)^2 =$ | |
| $\frac{\Sigma(X - \mu)^2}{N} =$ | |
| $\sqrt{\frac{\Sigma(X - \mu)^2}{N}} =$ | |

12. (1 pt) Which data set has a greater spread? (Circle one) Red Bluff Chico

13. (5 pts)

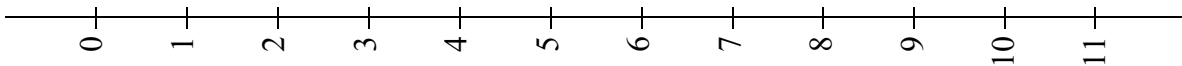
In this class, students responded to “How many hours of sleep did you get last night?”
Here are the numbers given in an ordered list:

1, 2, 3, 5, 5, 5, 5, 6, 6, 6, 6, 6, 7, 7, 7, 7, 7, 8, 8, 8, 9

Use the list to complete the table below:

| | |
|--|-----|
| <p style="text-align: center;">Mean</p> $\bar{X} = \frac{x_1 + x_2 + x_3 + \cdots + x_n}{n}$ | |
| <p style="text-align: center;">Sample Standard Deviation</p> $s = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n - 1}}$ | 2.0 |
| <p style="text-align: center;">Population Standard Deviation</p> $\sigma = \sqrt{\frac{\Sigma(X - \mu)^2}{N}}$ | 1.9 |

Place a point for each of the numbers above the number line below. Mark and label the position of the mean and draw boxes, using different colors around the 1st, 2nd, and 3rd (population) standard deviation from the mean.



14. (12 pts)

| Scholastic Aptitude Test Scores Mean and Standard Deviation | | | |
|--|-----|---------------------|-----|
| Math | | English | |
| mean: | 514 | mean: | 488 |
| standard deviation: | 117 | standard deviation: | 114 |

For each student below, determine which test score is relatively higher, the mathematics score or the writing. Plot their scores on the number line below.

| Student | Math Score | Writing Score | Math z-score $\frac{X - \mu}{\sigma}$ | Writing z-score $\frac{X - \mu}{\sigma}$ | Relatively Higher Score |
|-----------|------------|---------------|--|---|-------------------------|
| Student A | 631 | 600 | | | |
| Student B | 455 | 435 | | | |

Calculate 1, 2, and 3 standard deviations from the mean for Math and English scores, then label the number line with them. Plot both students' Math and English scores on the number line below.

