Lesson 2 Assignment

Outliers and Trimmed Mean – Part B

Work slowly and carefully. If you are having difficulty, go back and review the appropriate *Lesson*.

For full marks, show all calculations, steps, and/or explain your answers.

Total marks: 16

7.   The hours that Shane worked over a 13-week period were recorded in a table of values.

Week	Hours Worked
1	12
2	8
3	13
4	10
5	13
6	0
7	10
8	11
9	9
10	14
11	15
12	30
13	28

(1)   a.   Calculate the mean hours worked.

(1)   b. Calculate the median for the hours worked.
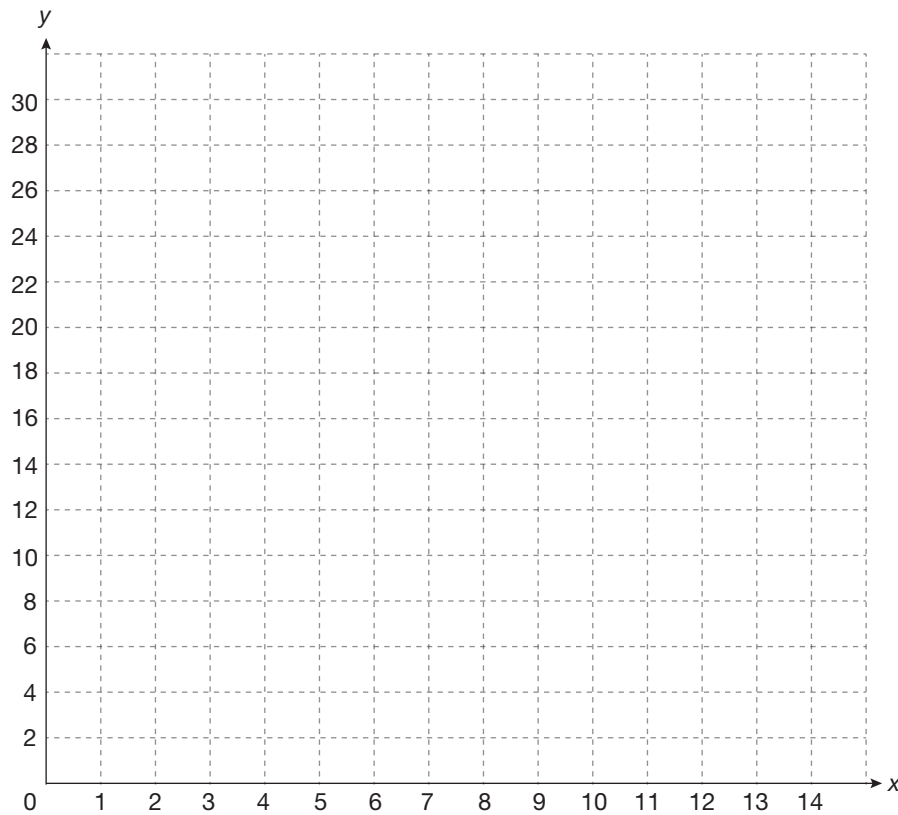
(1)   c. Calculate the mode(s) for the hours worked.

(2)   d. Graph the data.

Be sure to include
- the labelled axis (including units)
- the dependent variable on the y-axis and the independent variable on the x-axis
- a title
- a line connecting points when applicable (continuous: yes; discrete: no)

(2)   e. Circle and state any outliers on the graph.

(1)   f. Calculate the trimmed mean.

(1)   g. Which is the best representation of the data: the mean or the trimmed mean? Explain.

8.   Thomas calculated the trimmed mean for the following set of data.

42, 36, 45, 27, 73, 40, 32, 35, 41, 38

$$\overline{x} = \frac{\text{sum of the values in the data set}}{\text{total number of values in the data set}}$$

$$= \frac{32 + 35 + 36 + 38 + 40 + 41 + 42 + 45}{10}$$

$$= \frac{309}{10}$$

$$= 30.9$$

(1)   a. Identify the error that Thomas made.

(1)   b. Calculate the trimmed mean.

9. Rachel conducted a survey at her school to find the number of songs on students' phones. The data for 10 students in the class was $271, 329, 362, 408, 425, 457, 510, 510, 541, 638$. Rachel's friend Sarah just received her phone as a gift and has only 25 songs on her phone so far.

Explain how including this value will influence

(1)   a. the mean

(1)   b. the median

(1)   c. the mode

(2) 10. In 2017, one source listed the average individual income in Alberta to be:

Average	Annual Salary
mean	$72 154
median	$59 384
mode	$30 000

Which measure of central tendency should Statistics Canada record on their website? Explain.