Descriptive Statistics: Practice 2*

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Abstract

Practice exercise for Descriptive Statistics

1 Student Learning Outcomes

- The student will calculate measures of the center of the data.
- The student will calculate the spread of the data.

2 Given

The population parameters below describe the full-time equivalent number of students (FTES) each year at Lake Tahoe Community College from 1976-77 through 2004-2005. (*Source: Graphically Speaking by Bill King, LTCC Institutional Research, December 2005*).

Use these values to answer the following questions:

- μ = 1000 FTES
- Median = 1014 FTES
- σ = 474 FTES
- First quartile = 528.5 FTES
- Third quartile = 1447.5 FTES
- n = 29 years

3 Calculate the Values

Exercise 1 ***(Solution on p. 3.)***

A sample of 11 years is taken. About how many are expected to have a FTES of 1014 or above? Explain how you determined your answer.

Exercise 2 ***(Solution on p. 3.)***

75% of all years have a FTES:

a. At or below:

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b. At or above:

Exercise 3 *(Solution on p. 3.)*

The population standard deviation =

Exercise 4 *(Solution on p. 3.)*

What percent of the FTES were from 528.5 to 1447.5? How do you know?

Exercise 5 *(Solution on p. 3.)*

What is the IQR? What does the IQR represent?

Exercise 6 *(Solution on p. 3.)*

How many standard deviations away from the mean is the median?

Additional Information: The population FTES for 2005-2006 through 2010-2011 was given in an updated report. (Source: http://www.ltcc.edu/data/ResourcePDF/LTCC_FactBook_2010-11.pdf). The data are reported here.

Year	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Total FTES	1585	1690	1735	1935	2021	1890

Table 1

Exercise 7 *(Solution on p. 3.)*

Calculate the mean, median, standard deviation, first quartile, the third quartile and the IQR. Round to one decimal place.

Exercise 8

Construct a boxplot for the FTES for 2005-2006 through 2010-2011 and a boxplot for the FTES for 1976-1977 through 2004-2005.

Exercise 9 *(Solution on p. 3.)*

Compare the IQR for the FTES for 1976-77 through 2004-2005 with the IQR for the FTES for 2005-2006 through 2010-2011. Why do you suppose the IQRs are so different?

Solutions to Exercises in this Module

Solution to Exercise (p. 1)
6
Solution to Exercise (p. 1)

a. 1447.5
b. 528.5

Solution to Exercise (p. 2)
474 FTES
Solution to Exercise (p. 2)
50%
Solution to Exercise (p. 2)
919
Solution to Exercise (p. 2)
0.03
Solution to Exercise (p. 2)
mean = 1809.3
median = 1812.5
standard deviation = 151.2
First quartile = 1690
Third quartile = 1935
IQR = 245
Solution to Exercise (p. 2)
Hint: Think about the number of years covered by each time period and what happened to higher education during those periods.