Quiz: Statistics

Time to Test Your Skills!

1. Basics

For the given list of numbers, stored in a variable `data`, compute its basic statistical features and store the results in the given variables. You can use NumPy to calculate these values.

```python
import numpy as np

# Input list
data = [23, 57, 10, 10, 12, 35, 2, 74, 302, 10]

# Repalce the "None" values with your solutions
# Use NumPy to calculate the values for each variable
mean = None
median = None
standard_deviation = None

print("Mean is ", mean)
print("Median is ", median)
print("SD is ", standard_deviation)
```

Q   The HR committee of a company wants to determine the average number

of employees per team in their company. There are 50 teams in the company. They divide the total number of employees by 50 and determine that the average number of employees per team is 4.2. Which of the following must be true?

2. Statistical Significance

Interpreting P-Values

Say we are working on a study that tests the impact of smoking on the duration of pregnancy . Do women who smoke run the risk of shorter pregnancy and premature birth? Our data tells us that the mean pregnancy length is 266 days and we have the following hypothesis:

Null hypothesis, H_0: $\mu = 266$
Alternate hypothesis, H_a: $\mu < 266$

We also have data from a random sample of 40 women who smoked during their pregnancy. The mean pregnancy length of this sample is of 260 days with a standard deviation of 21 days. The z-score tells us that the p-value in this case is 0.03.

What probability does the p=0.03 describe? Based on the interpretation of the p-value, select whether the given statements are *Valid* or *Invalid*.

1

There is a 3% chance that women who smoke will have a mean pregnancy duration of 266 days.