Statistical Reasoning Name:

Chapter 3 Quiz Review

On a statistic test the class mean was 63 and the standard deviation was 7 and for the biology test the mean was 23 and has a standard deviation of 3.9.

1) Determine on which test the student had a better score. *(For each student you are determining whether they did better on the stats test or the biology test)*

i. A student received a 73 on the statistics test and a 26 on the biology test.

ii. A student gets a 60 on the statistics tests and a 20 on the biology test.

iii. A student gets a 78 on the statistics test and a 29 on the biology test.

iv. A student gets a 63 on the statistics test and a 23 on the biology test.

2) If a student had a z-score of 1.32 on the statistics test, what was their test score?

3) How can you tell from a z-score if a student scored above or below the class average?

The data set below represents weights of carry-on luggage (in pounds) for a random sample of passengers returning from a vacation to Hawaii. Use this data to answer the questions below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 3 | 12 | 12 | 14 | 17 | 18 | 18 |
| 18 | 19 | 19 | 21 | 21 | 21 | 22 |
| 26 | 26 | 26 | 27 | 27 | 28 | 29 |
| 29 | 30 | 31 | 32 | 32 | 32 | 33 |
| 35 | 36 | 36 | 38 | 38 | 40 | 41 |
| 42 | 45 | 47 | 47 | 48 | 50 | 54 |

1) What percentile is the person’s whose luggage weighs 21 pounds in?

2) What percentile is the person’s whose luggage weights 45 pounds in?

3) Which weight from the sample represents the 38th percentile?

4) What additional information from the sample would we need to calculate z-scores for the individual luggage weights?

Give an example or when having a low z-score and low percentile would be best.

Give an example of when having a high z-score and high percentile would be best.

The ages of 21 cars randomly selected in a student parking lot are shown below:

12 6 4 9 11 1 7 8 9 8

9 1 3 5 15 7 6 8 8 2 1 5

1) Find the mean age. Round to the nearest tenth if needed.

2) Find the median age. Round to the nearest tenth if needed.

3) Find the standard deviation of the ages. Round to the nearest hundredth if needed.

4) Find the z-score for a car that is 7 years old. Interpret what this value tells you.

5) Find the z-score for the car that is 3 years old. Interpret what this value tells you.

6) What would be the age of the car that has a z-score of -2.5?

7) For the car that is 4 years old…

a) Determine the z-score. Does this tell you that the car is new or old compared to the others? Explain.

b) Determine the percentile. Does this tell you that the car is new or old compared to the others? Explain.