Algebra 2 Bellwork Monday, April 25, 2016

1. Use this set of data: $56, 58, 59, 61, 64, 64, 67, 76, 77, 79, 80, 91, 94, 94, 99$

a. What percentile is 64 at?

b. What number is at the 80th percentile?

Use this set of test scores for 2 to 4. Round answers to the nearest tenth.
$62, 67, 68, 69, 71, 72, 72, 73, 74, 74, 74, 74, 74, 75, 76, 77, 79, 80, 81, 82, 85$

$\overline{x} = 74.2$ $\sigma = 5.3$

2. Find your z-score if you had an 80 on the test.

3. What test grade would give a z-score of -1.7?

4. a. What percent of the data is within one standard deviation of the mean?

b. What percent of the data is within two standard deviation of the mean?

5. A survey was conducted to find out what the citizens of a city think. Of the 1247 responses, 752 were in favor of raising property taxes in order to keep the library open.

a. Find the Sample Proportion rounded to the nearest tenth.

b. The margin of error for this survey was $\pm 3\%$. Find the range of percents that would be expected to contain the actual population proportion if all of the citizens had responded to the survey.

Algebra 2 Bellwork Monday, April 25, 2016 Answers

1. Use this set of data: 56, 58, 59, 61, 64, 64, 67, 76, 77, 79, 80, 91, 94, 94, 99

15 data items

a. What percentile is 64 at?

4/15 → 27th percentile

b. What number is at the 80th percentile?

(.80)(15) = 12 ⇒ 94 IT HAS 12 #'s below

Use this set of test scores for 2 to 4. Round answers to the nearest tenth.

62, 67, 68, 69, 71, 72, 72, 73, 74, 74, 74, 74, 74, 75, 76, 77, 79, 80, 81, 82, 85

$\bar{x} \pm 1\sigma$

$\bar{x} = 74.2$ $\sigma = 5.3$

$\bar{x} \pm 2\sigma$

2. Find your z-score if you had an 80 on the test. $\frac{80 - 74.2}{5.3}$ $z = 1.1$

3. What test grade would give a z-score of −1.7?

$-1.7 = \frac{x - 74.2}{5.3}$ $x = 65.2$

4. a. What percent of the data is within one standard deviation of the mean?

$\bar{x} \pm 1\sigma$ = 68.9 to 79.5 → $\frac{14}{21} \approx$ 66.7%

b. What percent of the data is within two standard deviation of the mean?

$\bar{x} \pm 2\sigma$ = 63.6 to 84.8 → $\frac{19}{21} \approx$ 90.5%

5. A survey was conducted to find out what the citizens of a city think. Of the 1247 responses, 752 were in favor of raising property taxes in order to keep the library open.

a. Find the Sample Proportion rounded to the nearest tenth.

$\frac{752}{1247} \times 100 \approx$ 60.3%

b. The margin of error for this survey was ±3%. Find the range of percents that would be expected to contain the actual population proportion if all of the citizens had responded to the survey.

60.3% ± 3% → 57.3% to 63.3%