

Brief Article

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Chapter 1

Workshops

Solution 1.1-1

all adults with normal vision.

Solution 1.1-2

the 1,347 teachers who mail back the questionnaire.

Solution 1.1-3

three

Solution 1.1-4

Rate of California is [1] 8.768816

Rate of Florida is [1] 23.75374

Rate of Illinois is [1] 10.39501

Rate of Nevada is [1] 42.45283

Therefore, Nevada has the highest number of death row prisoners.

Solution 1.1-5

Rate of Michelle's income is [1] -76.19048

Solution 1.1-6

[1] 78

is not equal to 100%.

Solution 1.1-7

A good choice of a graph would be a bar chart.

Solution 1.1-8

right skewed, mean, median.

Solution 1.1-9

counts or percents, mean, median.

Solution 1.1-10

Min. 1st Qu. Median Mean 3rd Qu. Max. -2.0000 0.0000 1.0000 0.8182 2.0000 3.0000

$Q_1 = 0$

Solution 1.2-1

Min. 1st Qu. Median Mean 3rd Qu. Max. 1.00 2.00 4.00 5.00 4.75 22.00

Therefore, $Q_3 = 5$

Solution 1.2-2

Therefore, $\text{IQR} = [1] \ 2.75$

Solution 1.2-3

Standard deviation would change.

Solution 1.2-4

The median will be larger than the mean if the distribution is left skewed.

Solution 1.2-5

You made an error in your calculations.

Solution 1.2-6

all the observations have the same value.

—
Solution 1.2-7

The box in each box plot marks the range covered by the middle half of the data.

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Solution 1.2-8

mean of curve A is less than mean of curve B and standard deviation of curve A is less than standard deviation of curve B.

—
Solution 1.3-1

The mean of the normal distribution is 50.

—
Solution 1.3-2

The standard deviation of the normal distribution is 10.

—
Solution 1.3-3

A number with 60 percent of the data above it is the 40th percentile.

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Solution 1.3-4

the standard deviation of the test scores is [1] 15

—
Solution 1.3-5

$$P[-1 < z < 2] = P[z < 2] - P[z < -1] = [1] 0.8185946$$

—
Solution 1.3-6

$$P[\bar{x} > 12] \times 1000 = (1 - P[\bar{x} < 12]) \times 1000 = (1 - P[z < .5]) \times 1000 = [1] 308.5375$$

—
Solution 1.3-7

So the median score on the exam is equal to 500.

—
Solution 1.3-8

The percent of scores are higher is [1] 0.0249979

Solution 1.3-9

the proportion of exceptional students among male SAT takers is about [1] 0.02275013

Solution 1.4-1

The point estimate is

Solution 1.4-2

The standard error of your estimate is [1] 0.01551468

Solution 1.4-3

The critical value is [1] 1.644854

Solution 1.4-4

The margin error of your estimate is [1] 0.02551937

Solution 1.4-5

The confidence interval is [1] 0.3944411 [1] 0.4454798

Solution 1.4-6

The point estimate is [1] 114.9

Solution 1.4-7

The standard error of your estimate is [1] 1.789786

Solution 1.4-8

The critical value is [1] 2.055529

Solution 1.4-9

The margin of error is [1] 3.678957

Solution 1.4-10

The 95% CI is [1] 111.221 [1] 118.579

Solution 1.5-1

The population parameter of interest is \$ [1] 8

Solution 1.5-2

The appropriate hypotheses are $H_0 : \mu = 8$ vs. $H_a : \mu \neq 8$

Solution 1.5-3

The test statistic is [1] 1.781538

Solution 1.5-4

The critical value is [1] -2.200985

Solution 1.5-5

Your conclusion is fail to reject H_0 .

Solution 1.5-6

Population parameter of interest is 128.

Solution 1.5-7

The appropriate hypotheses are $H_0 : \mu = 128$ vs. $H_a : \mu > 128$

Solution 1.5-8

The test statistic is [1] 2.321429

Solution 1.5-9

The critical value is [1] 1.317836

Solution 1.5-10

Your conclusion is reject H_0 in favor H_a