

## Math 1001 Test 2 Practice Problems

1.

A political scientist surveys 34 of the current 95 representatives in a state's congress.

What is the size of the sample:

What is the size of the population:

Get help: [Video](#) [Video](#)

[Show Answer](#) 34

[Show Answer](#) 95

2.

The city of Raleigh has 8,500 registered voters. There are two candidates for city council in an upcoming election: Brown and Feliz. The day before the election, a telephone poll of 400 randomly selected registered voters was conducted. 218 said they'd vote for Brown, 158 said they'd vote for Feliz, and 24 were undecided.

Give the sample statistic for the percentage of voters surveyed who said they'd vote for Brown. Round your answer to the nearest tenth of a percent.

% of the surveyed voters said they'd vote for Brown.

This sample statistic suggests that we might expect  of the 8,500 registered voters to vote for Brown. Round your answer to the nearest person.

Get help: [Video](#)

[Show Answer](#) 54.5

[Show Answer](#) 4633

3.

In a study, the data you collect is Habits on a Always/Sometimes/Never scale.

This data is:

- Quantitative
- Qualitative (Categorical)

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[Show Answer](#) Qualitative (Categorical)

4.

Does this describe an observational study or an experiment?

A group of students are told to listen to music while taking a test and their results are compared to a group not listening to music

Observational Study

Experiment

Get help: [Video](#) [Video](#)

[Show Answer](#) Experiment

5.

In a study, the sample is chosen by pulling 30 names from a hat

What is the sampling method?

Random

Stratified

Convenience

None of these

Get help: [Video](#) [Video](#)

[Show Answer](#) Random

6.

As part of a statistics project, a teacher brings a bag of marbles containing 800 white marbles and 200 red marbles. She tells the students the bag contains 1000 total marbles, and asks her students to determine how many red marbles are in the bag without counting them.

A student randomly draws 100 marbles from the bag. Of the 100 marbles, 15 are red.

The data collection method can best be described as

- Controlled study
- Survey or Sample
- Census
- Clinical study

The target population consists of

- The 100 marbles drawn by the student
- The 1000 marbles in the bag
- The 15 red marbles drawn by the student
- The 200 red marbles in the bag
- None of the above

The sample consists of

- The 15 red marbles drawn by the student
- The 1000 marbles in the bag
- The 100 marbles drawn by the student
- The 200 red marbles in the bag
- None of the above

Based on the sample, the student would estimate that  marbles in the bag were red.

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Survey or Sample

The 1000 marbles in the bag

The 100 marbles drawn by the student

150

7.

A team of researchers is testing the effectiveness of a new HPV vaccine. They randomly divide the subjects into two groups.

Group 1 receives existing HPV vaccine, and Group 2 receives new HPV vaccine.

The patients in the study do not know which group they are in.

Which is the treatment group?

- Group 1
- Group 2
- Neither group

Which is the control group (if there is one)?

- Group 1
- Group 2
- No control group

Is this study blind, double blind, or neither?

- Blind
- Double-blind
- Neither

Which best describes this research?

- Experiment
- Placebo Controlled Experiment
- Controlled Experiment
- Clinical Study
- Survey

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Show Answer Group 2

Show Answer Group 1

Show Answer Blind

Show Answer Controlled Experiment

8.

The table below shows scores on a Math test

|     |     |    |     |
|-----|-----|----|-----|
| 80  | 70  | 80 | 90  |
| 70  | 50  | 50 | 80  |
| 80  | 100 | 50 | 60  |
| 60  | 30  | 70 | 90  |
| 100 | 80  | 60 | 100 |
| 50  | 90  | 60 | 100 |

Complete the frequency table for the Math test scores

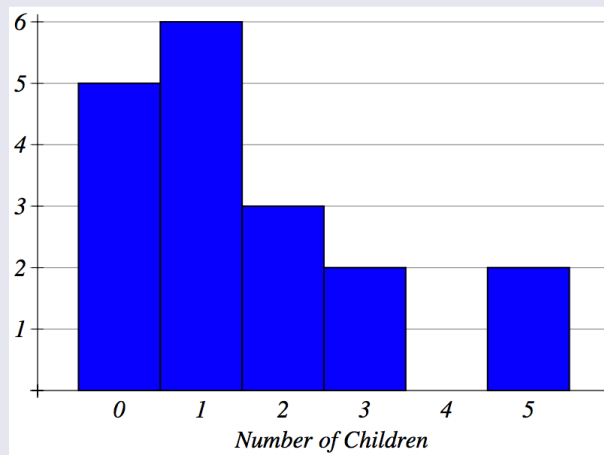
| Score | Frequency            |
|-------|----------------------|
| 30    | <input type="text"/> |
| 40    | <input type="text"/> |
| 50    | <input type="text"/> |
| 60    | <input type="text"/> |
| 70    | <input type="text"/> |
| 80    | <input type="text"/> |
| 90    | <input type="text"/> |
| 100   | <input type="text"/> |

Get help: [Video](#)

Show Answer 1,0,4,4,3,5,3,4

9.

A group of adults were asked how many children they have in their families. The bar graph below shows the number of adults who indicated each number of children.



How many adults were questioned?

What percentage of the adults questioned had 0 children? Round to 1 decimal place.

 %

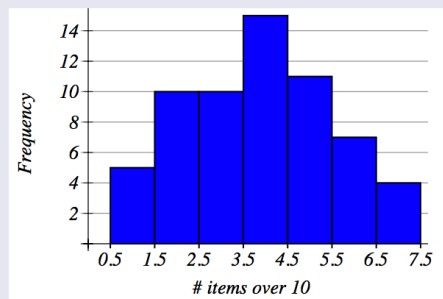
Get help: [Video](#)

Show Answer 18

Show Answer 27.777777777778

10.

During one shift, the express lane clerk recorded how many times customers violated the "10 items or less" rule for his lane. In particular, he recorded how many items over the limit each violator placed on the conveyor belt. This data is summarized in the histogram below. NOTE: The last class actually represents "7 or more items," not just 7 items.



What is the frequency of times the limit was exceeded by at most 2 items?

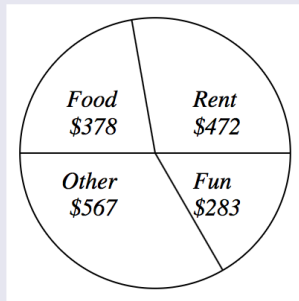
Answer:  times

Get help: [Video](#) [Video](#)

Show Answer 15

11.

Kara categorized her spending for this month into four categories: Rent, Food, Fun, and Other. The amounts she spent in each category are pictured here.



What percent of her total spending did she spend on Rent? Answer to the nearest whole percent.

%

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[Show Answer](#) 28

12.

Find the mean and median of the following data set. Round your answers to the nearest hundredth as needed.

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 8 | 7 | 3 | 9 | 5 | 9 | 3 | 9 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|

Mean:

Median:

Get help: [Video](#) [Video](#) [Video](#)

[Show Answer](#) 5.55

[Show Answer](#) 5

13.

Find the mode for the following data.

| <b>Deliveries Each Week</b> | <b>Frequency</b> |
|-----------------------------|------------------|
| 2                           | 6                |
| 4                           | 5                |
| 6                           | 4                |
| 8                           | 2                |

Mode =

Get help: [Video](#)

[Show Answer](#) 2



14.

Consider the following data set. Round your answers to the nearest hundredth as needed.

65 78 76 98 71

52 98 67 98 88

Mean =

Median =

Mode =

Range =

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Show Answer 79.1

Show Answer 77

Show Answer 98

Show Answer 46

15.

Calculate the mean and sample standard deviation of the data shown. Round your answers to two decimal places

| x  |
|----|
| 22 |
| 24 |
| 10 |
| 17 |
| 16 |
| 27 |

Mean =

Sample standard deviation =

Get help: [Video](#) [Video](#) [Video](#)

Show Answer 19.33

Show Answer 6.19

16.

Find the 5 number summary for the data shown below.

|    |    |
|----|----|
| 69 | 67 |
| 16 | 91 |
| 39 | 62 |
| 66 | 96 |
| 30 | 98 |
| 48 | 1  |
| 63 |    |

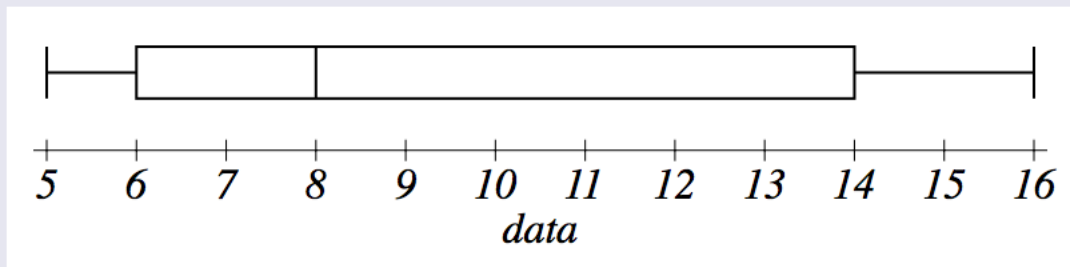
5 number summary:

, , , ,

Get help: [Video](#) [Video](#) [Video](#) [Video](#)

Show Answer 1,39,63,69,98

17.



Based on the boxplot above, identify the 5 number summary

,  ,  ,  ,

Get help: [Video](#)

Show Answer 5

Show Answer 6

Show Answer 8

Show Answer 14

Show Answer 16

18.

Complete the following statements.

In general,  % of the values in a data set lie at or below the median.

% of the values in a data set lie at or below the third quartile (Q3).

If a sample consists of 900 test scores,  of them would be *at or below* the second quartile (Q2).

If a sample consists of 900 test scores,  of them would be *at or above* the first quartile (Q1).

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Show Answer 50

Show Answer 75

Show Answer 450

Show Answer 675

19.

Complete the following statements.

The first quartile (Q1) corresponds to the <sup>th</sup> percentile.

The median corresponds to the <sup>th</sup> percentile.

The third quartile (Q3) corresponds to the <sup>th</sup> percentile.

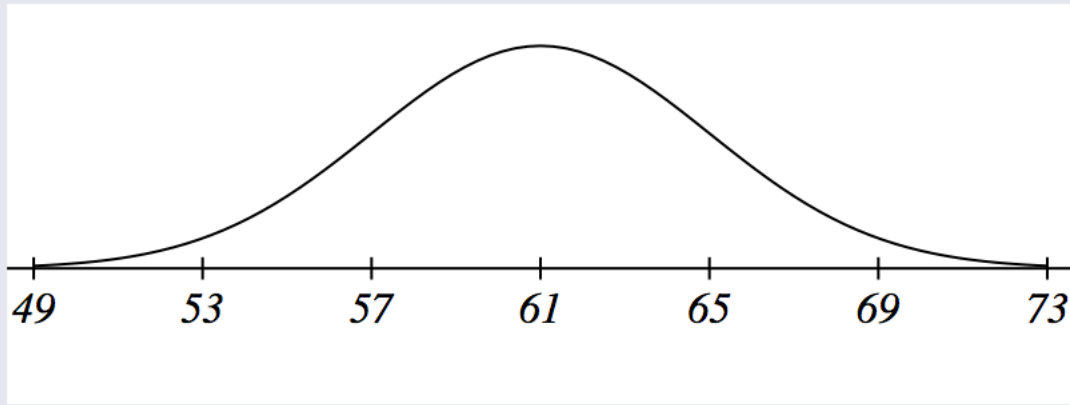
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Show Answer 25

Show Answer 50

Show Answer 75

20.



Based on the graph of this normal distribution,

a. The mean is .

b. The median is .

c. The mode is .

d. The standard deviation is .

Show Answer 61

Show Answer 61

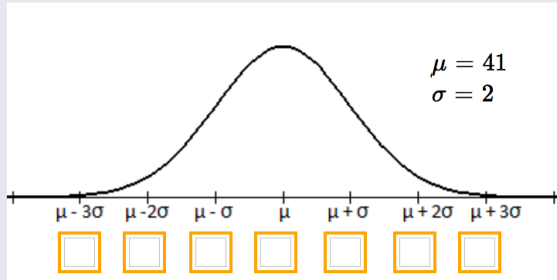
Show Answer 61

Show Answer 4

21.

The time to complete an exam is approximately Normal with a mean  $\mu = 41$  minutes and a standard deviation  $\sigma = 2$  minutes.

The bell curve below represents the distribution for testing times. The scale on the horizontal axis is equal to the standard deviation. Fill in the indicated boxes.



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Show Answer 35

Show Answer 37

Show Answer 39

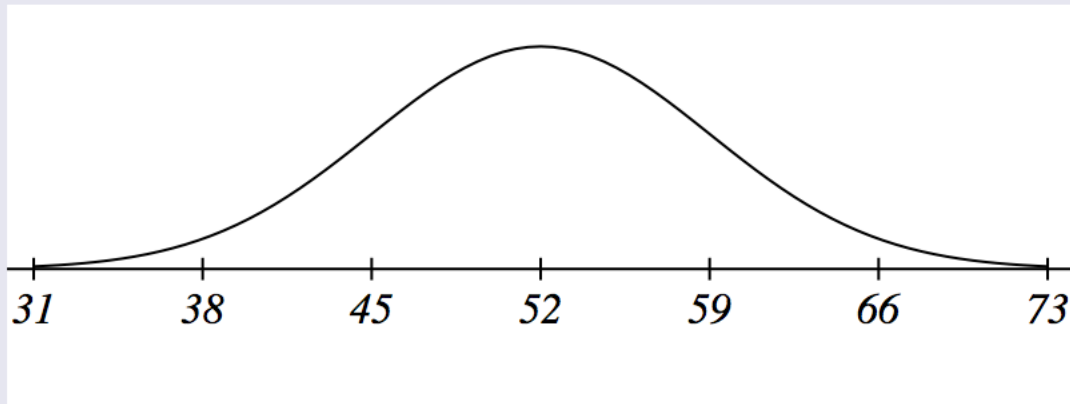
Show Answer 41

Show Answer 43

Show Answer 45

Show Answer 47

22.



Based on the graph of this normal distribution,

- a. The mean is .
- b. The standard deviation is .
- c. 68% of the data values are between  and .
- d. 95% of the data values are between  and .
- e. 99.7% of the data values are between  and .

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Show Answer 52

Show Answer 7

Show Answer 45

Show Answer 59

Show Answer 38

Show Answer 66

Show Answer 31

Show Answer 73

23.

If the area to the left of  $x$  in a normal distribution is 0.741, what is the area to the right of  $x$ ?

Answer:

If the area to the right of  $x$  in a normal distribution is 0.741, what is the area to the left of  $x$ ?

Answer:

Show Answer 0.259

Show Answer 0.259

24.

Consider the Standard Normal distribution.

The mean is always  and the standard deviation is always .

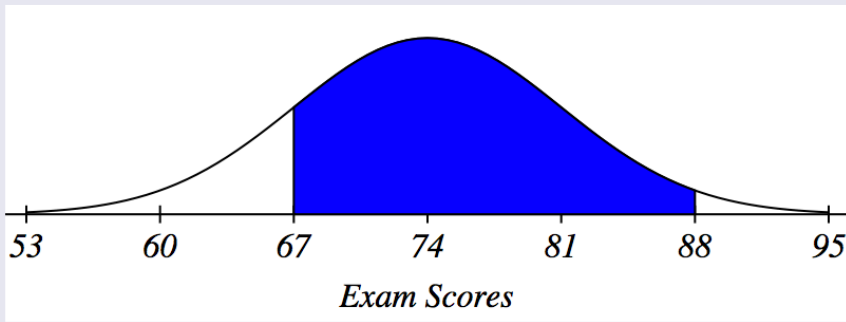
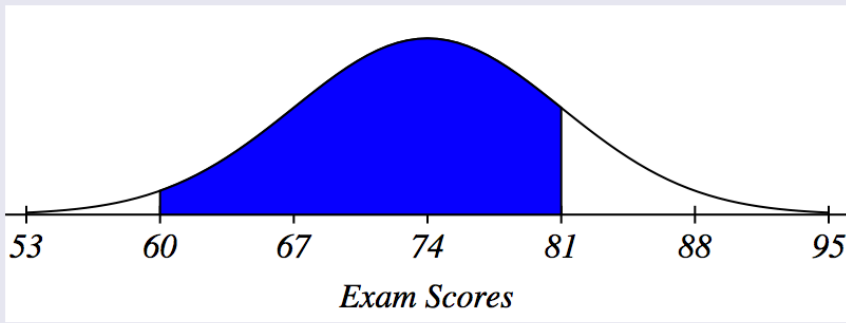
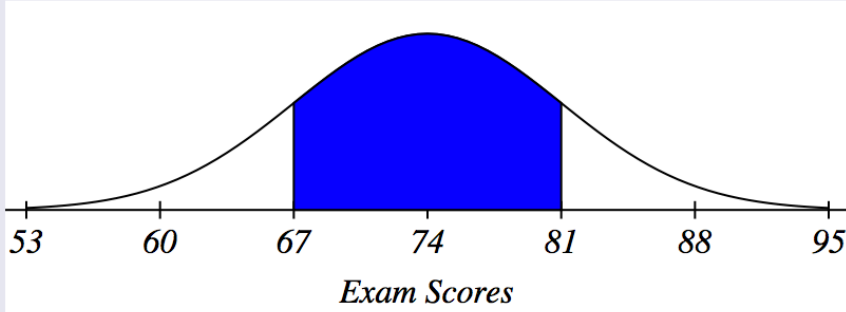
Show Answer 0

Show Answer 1



25.

A set of exam scores are approximately normally distributed with mean = 74 and standard deviation = 7. Use the **Empirical Rule** to determine the area of the shaded regions shown below.



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Show Answer 68

Show Answer 81.5

Show Answer 81.5