



# The GED Mathematics Test

## *Data Analysis*



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# GED

## Video Partner



### Passing the GED Math Test

The best argument against democracy is a five minute conversation with the average voter.  
Sir Winston Churchill (1874 - 1956)

Video 36 Focus: how you use data analysis in your daily lives and on the GED Math Test.

#### You Will Learn From Video 36:

- How to read and interpret data on charts and graphs.
- About the different types of graphs and charts.
- About different measures of central tendency.
- How to calculate the average (mean) and find the median.
- Why it is important to evaluate data displays when reading.



#### Words You Need to Know:

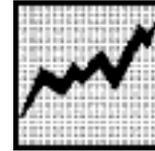
While viewing the video, put the letter of the meaning by the correct vocabulary word. Answers are on page 17.

- |                 |  |
|-----------------|--|
| _____ 1. data   | a. an arrangement of data using lines, circles, or pictures                              |
| _____ 2. graph  | b. bits of information   |
| _____ 3. mode   | c. the numerical average found by adding the data and dividing by the number of elements |
| _____ 4. mean   | d. the most common number in a data set  |
| _____ 5. median | e. the number in the middle of a set of data   |

#### Points to Remember:

- Graphs, charts, and tables are used to present data clearly.
- Measures of central tendency - mean, median, and mode - can also help to analyze, display, and interpret data.
- Graphs, charts, and tables will appear on the GED Math, Social Studies, and Science Tests.
- Data displays are used to persuade readers and must be evaluated for accuracy and validity.

## Introduction to Data Analysis



Data are bits of information. They may be simple facts such as how far the moon is from the Earth and the Earth from the sun. Or data can be a complex set of numbers that describe the rise and fall of gasoline prices during a given period of time.

Since it can be confusing just to write about data, it is common to display data in visual forms such as tables, charts, and graphs. You will see data displayed in these forms on the GED Social Studies, Science, and Math Tests. It is important to be able to interpret tables, charts, and graphs to answer the questions on the tests.

The GED Math Test will also test your knowledge of measures of central tendency--mean, median, and mode. You will have to be able to define these measures and know how they are used.

### Tables

Most tables are made up of a series of rows (horizontal) and columns (vertical). Where the rows and columns intersect, cells are formed which can hold items or numbers that are part of the data being displayed.

Mr. Quinley wondered if his 35 enrolled students attended class more often on certain days than others. He thought patterns of attendance should influence his teaching in ways such as when important information was presented or when he gave tests or quizzes. He recorded the attendance for one month on a table so he could analyze it.

*Mr. Quinley's Class Attendance for March*

	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>Week 1</b>	35	35	33	34	28
<b>Week 2</b>	28	34	34	34	26
<b>Week 3</b>	27	33	32	33	27
<b>Week 4</b>	26	35	35	34	29

After he entered the data in the table, Mr. Quinley could quickly see that attendance was lighter on Mondays and Fridays than during the middle of the week. So he decided to introduce new lessons on Tuesdays and provide intensive practice on Wednesdays and Thursdays. Also, in order to try to increase attendance on the lighter days, he often gave bonus point assignments to reward those who did attend on those days.

When analyzing data on a table, look first for the *title* to see what the table will show. Also look for other **labels** to see what the cells of the table will show. What is the *title* of the table above?

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What are the **labels** which show what the data in the cells show?

\_\_\_\_\_ and  
\_\_\_\_\_

Use data displayed on the table below to answer the questions. Answers are on page 17.

*Average Daytime Summer Temperatures*

	<b>June</b>	<b>July</b>	<b>August</b>
<b>San Francisco</b>	66°F	67°F	65°F
<b>Sacramento</b>	93°F	96°F	99°F
<b>Monterey</b>	69°F	67°F	66°F
<b>Los Angeles</b>	72°F	74°F	71°F
<b>Palm Springs</b>	99°F	106°F	110°F

1. Which city shows the greatest increase in temperature as summer progresses?
2. Which city shows a continuous cooling trend as summer progresses?
3. To which cities would you travel with a light sweater or jacket?
4. What other climate conditions besides temperature would be important to consider when packing your wardrobe to visit these cities?
5. Which city would you most like to visit in the summer? Explain your answer.



1. \_\_\_\_\_ 2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

*Create a Table*

Collect data from a sample of 50 classmates or friends. Ask the people to tell you if they are right or left handed, **and** if they are right or left thumbed. To determine the dominant thumb, clasp your hands in your lap and see which thumb is on top. Each person has only one comfortable, natural position. Tally your data and place the numbers on the table below.



## Hand and Thumb Dominance



	Right Handed	Left Handed
Right Thumbed		
Left Thumbed		

### *About Math and Life*

The Plymouth-Padua Homeowners' Alliance was formed in 2004 to try to stop the construction of a multi-unit apartment complex in the middle of a large neighborhood of up-scale single family homes. The alliance covers a five square mile area that is part of the communities of Plymouth and Padua. The Alliance has used several sources of funds to try accomplish its mission. The revenue is displayed on the table below:



Answers are on

page 17.

### **P-P HA Funds**

Member Donations	Yard Sale	Pancake Breakfast	Spaghetti Feed	Sunglasses Kiosk
\$3,550.	\$2,100.	\$660.	\$990.	\$720.

Approximately what percentage of the revenue collected to date has come from the members donating money? \_\_\_\_\_

P-P HA has spent \$2,500 to retain an attorney and may have other expenses in the future. The Alliance is considering petitioning the county for re-zoning of the property. If the county charges a \$13,000 fee to file the petition, how much money is still needed?

\_\_\_\_\_

## **Graphs**



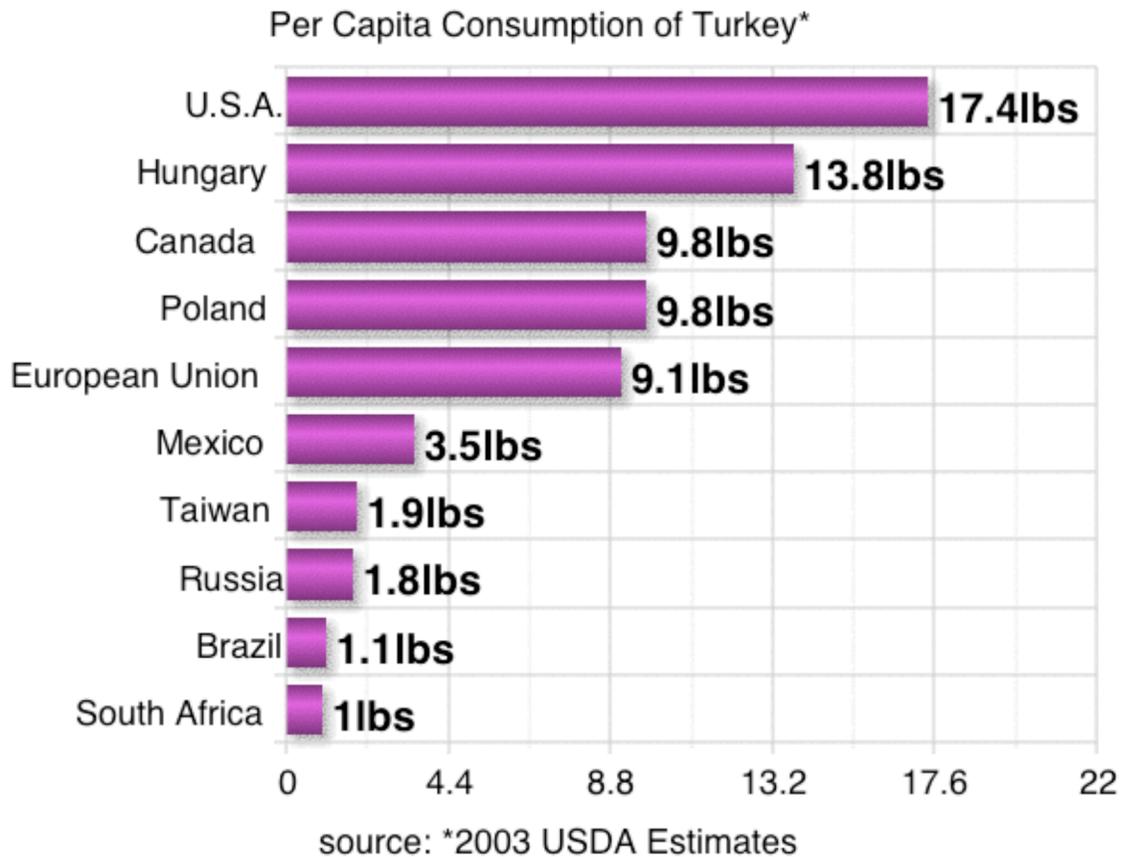
Graphs are ways to organize and arrange data so that it is more easily understood by the viewer. There are different types of graphs including bar and column graphs, line graphs, pictographs, and circle graphs or pie charts.

It is important to know how to create and interpret graphs as they are used in many important areas of research and used to help people in decision-making. On the GED Social Studies, Science, and Math Tests, you will have to answer questions by reading and interpreting graphs of all types. You will not have to create you own graphs for the test, but may find that skill useful in school or work.

All graphs should first be viewed by reading the title and looking at the labels on each axis of the graph to see what data are displayed there.

## Bar or Column Graphs

A bar graph is used to show relationships between groups. The two items being compared do not need to affect each other. It is a fast way to show big differences. Items can be represented in horizontal bars or in vertical columns. Look at the following graph which shows the data using horizontal bars. Carefully read the title and the labels on each axis to see what data is displayed by the graph.



Answer the following questions about this bar graph. Some answers can be found on the graph itself, and some answers will be found by using your math and critical thinking skills.

Answers are on page 17.

What is the title of the graph? \_\_\_\_\_

What could you label the left side of the graph? \_\_\_\_\_

What could you label the bottom of the graph? \_\_\_\_\_

What is the source of the data shown in the graph? \_\_\_\_\_

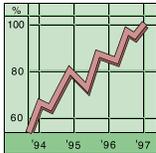
What is the difference in per capita consumption of turkey between the United States and the European Union? \_\_\_\_\_

Write a sentence comparing the per capita consumption of turkey between Brazil and Mexico. \_\_\_\_\_

Using the data displayed on the graph, write two true statements about the per capita consumption of turkey: \_\_\_\_\_

Which of the following may be reasons for the United States being such a large consumer of turkey?

- 1) people can afford it
- 2) turkey is processed in several areas of the country
- 3) a lot of turkeys are imported from Canada
- 4) 1) and 2)
- 5) 1) and 3)



### Line Graphs

A line graph is used to show continuing data: how one thing is affected by another. It is clear to see how things are going by the rises and falls that a line graph shows. This kind of graph is needed to show the effect of an independent variable on a dependent variable. In the graph below, the price of gasoline in the U.S. is shown to change over time.

U.S. Average Price of Gasoline per Gallon



source: 2004 U.S. Bureau of Labor Statistics

Answer the following questions about this line graph. Some answers can be found on the graph itself, and some answers will be found by using your math and critical thinking skills. Answers are on page 17.

What is the title of the graph? \_\_\_\_\_

What could you label the left side of the graph? \_\_\_\_\_

What could you label the bottom of the graph? \_\_\_\_\_

What is the source of the data shown in the graph? \_\_\_\_\_

What is the difference between the average price of gas at its lowest and at its highest? \_\_\_\_\_

During which four months was the price of gas the highest? \_\_\_\_\_

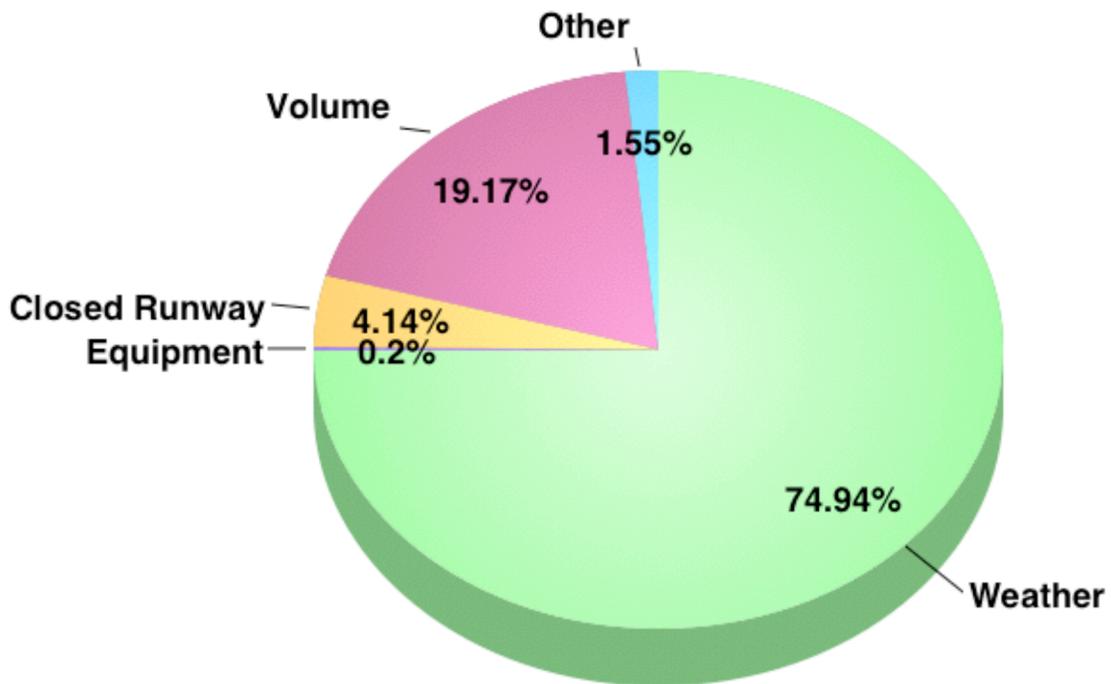
Write a sentence to describe the price of gas during the summer months. \_\_\_\_\_

### *Circle Graphs or Pie Charts*



A circle graph is used to show how a part of something relates to the whole. This kind of graph is needed to show percentages effectively.

**Airline On-Time Statistics and Delay Causes**



source: Federal Aviation Administration OPSNET

Answer the following questions about this circle graph. Some answers can be found on the graph itself, and some answers will be found by using your math and critical thinking skills. Answers are on page 18.

What is the title of the graph? \_\_\_\_\_

What is the source of the data shown in the graph?  
\_\_\_\_\_

What is the most common reason for delays at airports? \_\_\_\_\_

What per cent of delays can be attributed to an airport's volume? \_\_\_\_\_

What causes the least number of delays at airports? \_\_\_\_\_

Approximately what per cent of delays are caused by closed runways? \_\_\_\_\_

Write two or three sentences explaining the data shown in this graph:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Measures of Central Tendency

Data analysis helps us to learn things about the typical characteristics of a population. Maybe we want to know the cost of the average car, the average number of children per household in a given state or country, or the average life span of various breeds of purebred dogs. Statisticians must collect enough data to find out what is typical of a certain population. When enough data is collected, it can usually be organized into a normal bell-shaped curve.

With most of the data clustered in the center areas of the curve, we can then look at several measures of central tendency to further clarify what is typical of the population. On the GED Math Test, you will have to find some of these measures and also use them to answer questions that compare one to another.

### *Mean (Average)*

**Mean** is one measure of the center of the set of data. The mean is the **arithmetic average**. To find the mean, add the values of the data and divide by the number of items in the set.

The ABE students in Room 13 took a survey to see how many children they had. They posted the information on the data table below:



Children per Student	1	2	3	4	5
Number of Students	6	10	4	2	1

To find the **average** number of children, they added up all of the children in the data set: 6, 20, 12, 8, and 5 = 51. Then they divided by the number of students with children (23).  $51/23 = 2.22$

The average number of children of ABE students in Room 13 is 2.22 children! Often when finding the mean, the answer will be a fraction or decimal even if the item cannot be anything other than a whole. So the students may also say that the average number of children is *approximately* two.

Practice finding the mean (average) of the following sets of data. Answers are on page 18.

- A. Find the average of Millie’s test scores: 68, 72, 78, 85, and 79. \_\_\_\_\_
- B. Find the average number of gallons held by these gas tanks: 10, 10, 10.8, 12, 12.2, 12.4, and 12.8. \_\_\_\_\_
- C. Find the mean acres of the farms in northeast Panama County: 265, 345, 1060, and 100. \_\_\_\_\_
- D. What is the average of 2, 4, 6, 8, 10, 11, and 12? \_\_\_\_\_

**Median**

The **median** is another measure of central tendency. The median is the **middle** or **central value** in a set of data when the data is arranged from the least to the greatest or the greatest to the least. Think of the median strip which goes down the center of the highway to remember this term. Half of the data will be below the median and half of the data will be above the median.



Remember the children of the ABE students in Room 13.



Children per Student	1	2	3	4	5
Number of Students	6	10	4	2	1

To find the median number of children, order the number of children from least to greatest:

1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 4, 4, 5

The number 2 is in the middle of the set of data. There are eleven numbers below it and eleven numbers above it. So the median number of children of the ABE students is 2.

Practice finding the median of the following sets of data. Answers are on page 18.

- A. Find the median of Sandy’s test scores: 78, 62, 79, 85, and 81. \_\_\_\_\_
- B. Find the median number of gallons held by these gas tanks: 11, 10, 11.8, 12, 12.2, 12.4, and 10.8. \_\_\_\_\_

- C. Find the median acres of the farms in southwest Anabelle County: 265, 345, 1060, 774 and 100. \_\_\_\_\_
- D. What is the median of 2, 4, 6, 8, 10, 11, and 12? \_\_\_\_\_

**If a given data set has an even number of elements, the median is found by taking the average of the middle two values.**

The baseball team trained by running before practice each day. They ran the following number of miles before the last six practices: 2, 2, 3.5, 4.5, 4, and 3. What was the median number of miles that they ran?



Order the data from greatest to least.

4.5, 4, 3.5, 3, 2, 2

The two middle numbers are 3.5 and 3. Find their average.  $6.5/2 = 3.25$

The median number of miles that the team ran was 3.25 miles.

- A. Find the median of the data set containing 16, 15, 14, 13, 12, 11, 10, and 9.  
 B. What is the median of 1, 2, 2, 2, 4, 2, 1, 3, 3, 3, 3, 5, 4, and 6?



*Mode*

The **mode** is another measure of central tendency. It is the value of the number in the data set that occurs most often. The fashion industry uses the word mode to mean the most popular fashion or style of a season. Accessories come and go. What is the mode one season, may be outmoded the next! So you can always find the mode as the value that you see the most. Some data sets may have no mode, and others may have more than one.



Again, remember the children of the ABE students in Room 13.



Children per Student	1	2	3	4	5
Number of Students	6	10	4	2	1

To find the **mode** of this data set, notice which number occurs the most. The number two occurs more than any other value, so the mode is 2.

1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 4, 4, 5

Practice finding the mode of the following sets of data. Answers are on page 18.

- A. Find the mode of 1, 1, 2, 3, 5, 8, 13, and 21. \_\_\_\_\_
- B. Find the mode in the number of gallons held by these gas tanks: 11, 10, 11.8, 12, 12.2, 12.4, and 10.8, 10, 12.6, 12.2, and 10. \_\_\_\_\_
- C. Find the mode in the distribution 6, 16, 66, 666, 606, 666, 666, and 6. \_\_\_\_\_

- D. What is the mode of 2, 4, 6, 8, 10, 12, and 14? \_\_\_\_\_  
 E. What is the mode of 2, 2, 4, 6, 8, 10, 11, 12, 12, and 13? \_\_\_\_\_

## Range

The **range** is the spread between the lowest and highest value in a set of data. To find the range, subtract the lowest number in the set from the greatest. If the range is a small number, the data is close together. If the range is a large number, the numbers are more spread out. Although the range is not a matter of central tendency, it is often a useful tool to help us understand a set of data.

1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 4, 4,

In the data set above, the range is 4. Four is the difference between the lowest and highest numbers. Sometimes the range is expressed by using both the lowest and highest numbers. We can also describe this range as 1-5.



## Mixed Practice



Flavio collected data in his adult school social studies class to find out how many pets the students had. Flavio's data table is below: Answers are on page 18.

Pets of the Adult School Social Studies Class

Pets per Student	0	1	2	3	4	5
Number of Students	2	5	5	8	3	1



- Find the following information for this set of data: mean \_\_\_\_\_, median \_\_\_\_\_, mode \_\_\_\_\_, and range \_\_\_\_\_.
- Create a bar or column graph to display Flavio's set of data. Remember to include a title and to label each axis.
- After the graph was finished, three new students arrived who have 2, 3, and 7 pets respectively. How would this information change the answers to Question 1? mean \_\_\_\_\_, median \_\_\_\_\_, mode \_\_\_\_\_, and range \_\_\_\_\_.

Place the graph here:

Measure Up  
Liquid Capacity Review



Answers are on page 18.

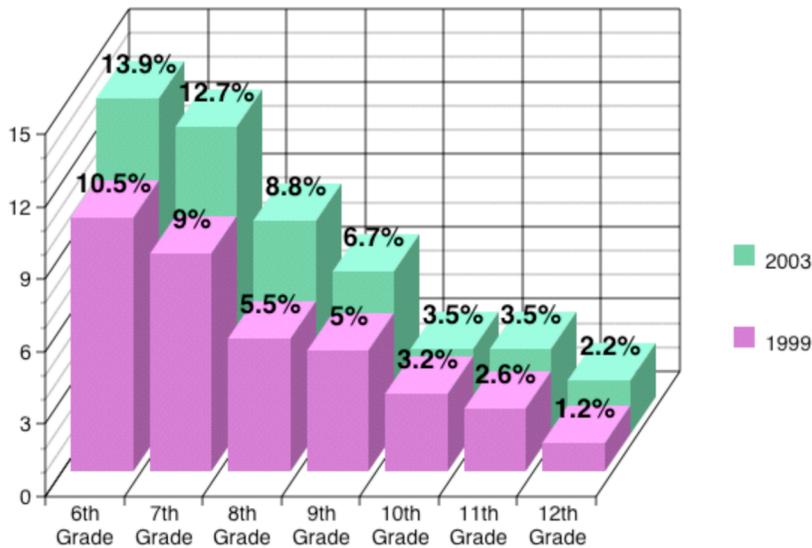
- 1 pint = \_\_\_\_\_ quart      1 quart = \_\_\_\_\_ pints      2 gallons = \_\_\_\_\_ quarts
- 2 gallons = \_\_\_\_\_ pints      1 pint = \_\_\_\_\_ cups      \_\_\_\_\_ gallons = 32 cups
- 4 Tablespoons = \_\_\_\_\_ cup      \_\_\_\_\_ teaspoons = 2 Tablespoons      1 cup = \_\_\_\_\_ pint
- 1 cup = \_\_\_\_\_ ounces      \_\_\_\_\_ ounces = 1 quart      3 gallons = \_\_\_\_\_ quarts
- 1 liter = \_\_\_\_\_ milliliters      4 gallons = \_\_\_\_\_ pints      \_\_\_\_\_ liters = 2000 milliliters



**Graphs on the Social Studies and Science Tests**

It is important to be able to critically read and interpret tables, charts, and graphs on the GED Social Studies and Science Tests as well as on the GED Math Test. We see tables and graphs in magazines and newspapers every day. Sometimes graphs are written to persuade the reader to take one position or another on an issue.

Percentage of students who reported being bullied at school



source: U.S. Department of Justice, Bureau of Justice Statistics, School Crime Supplement (SCS) to the National Crime Victimization Survey, 1999, 2001, and 2003

Answer the following questions about this graph. Some answers can be found on the graph itself, and some answers will be found by using math and critical thinking skills.

Answers are on page 18.

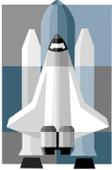
What can be said about the increase in bullying as it applies to the age of the child?

- 1) Bullying is increasing more for younger children than for older ones.
- 2) Older children are being bullied even more than younger ones.
- 3) The increase in bullying is the same no matter what the age.
- 4) Bullying has increased most at the 8<sup>th</sup> and 9<sup>th</sup> grades.
- 5) Bullying is a serious problem and must be stopped!

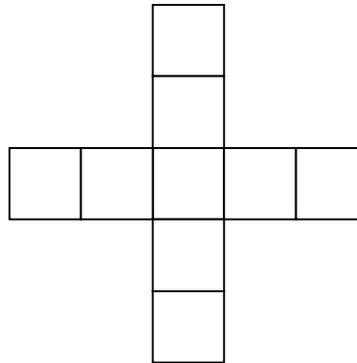
What can school officials learn from this data about helping children with social skills?

- 1) Most emphasis should be placed on group work with high school students.
- 2) Students in 7<sup>th</sup> and 8<sup>th</sup> grades do not see bullying as a problem so interventions are not needed.
- 3) Character education and self-esteem workshops may help decrease bullying.
- 4) Bullying is getting worse and should be addressed by school programs and counselors.
- 5) So few students are bullied that the school need not be concerned with it.

### Out into Space



Use the numbers 1-9 to fill in the boxes below. Use each number only once, and place it in one of the boxes so that the sum is the same in both directions.  
Answer is on page 19.



### Geometry Review

Answers are on page 19.



Find the area of the following figures:

- 1) A rectangle that is 4 feet wide and 6 feet long
- 2) A square with a side of 2 yards
- 3) A triangle with a base of 5 inches and a height of 6 inches
- 4) A circle with a diameter of 12 centimeters

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Find the perimeters of the following figures:

- 1) A rectangle with a width of 2 feet and a length of 3 feet
- 2) An equilateral triangle with a side of 5 inches
- 3) A square with a side of 12 inches
- 4) A circle with a radius of 3 feet

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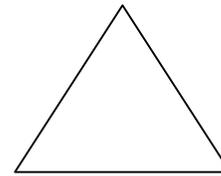
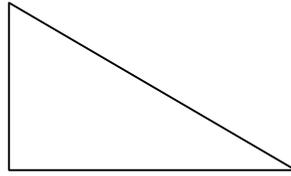


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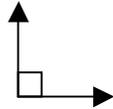
Name the types of triangles shown below:



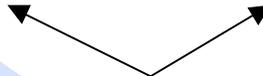
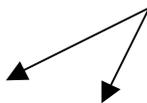
\_\_\_\_\_

\_\_\_\_\_

Name the types of angles shown below:



\_\_\_\_\_



\_\_\_\_\_



**STRATEGY SESSION**

### Look for Key Words and Eliminate Possibilities

Sometimes it will help to eliminate possibilities to narrow the number of answers that could be correct. If one or two of the answers **cannot** be the right answer, you have increased the possibility of choosing the correct answer from the ones that remain. This strategy is especially valuable for difficult reading questions where critical thinking is required to select the correct answer.

Look at this question from the graph on page 12:

What can be said about the **increase** in bullying as it applies to **the age of the child**?

- 1) Younger children are being bullied even more than older ones.
- 2) Older children are being bullied even more than younger ones.
- 3) The increase in bullying is the same no matter what the age.
- 4) Bullying has increased most at the 8<sup>th</sup> and 9<sup>th</sup> grades.
- 5) Bullying is a serious problem and must be stopped!

Follow these steps to eliminate possibilities: Read the question carefully noting any important words. Sometimes important words are italicized or underlined for you. Other times you will have to look for the key words yourself. Identification of key words is an important part of being a good critical reader. Now analyze each choice.

Choice 1) seems true on first analysis, but you still have to make sure it is the best answer.

Eliminate choice 2) because it is the opposite of what the graph says. Cross it out now.

Eliminate choice 3) after doing some quick math. Cross it out now.

Eliminate choice 4) because the increase in grades 6 and 7 are even greater. Cross it out now.

Eliminate choice 5). It may be very true but does not really address the key words in the question. Cross it out now.

Therefore, choice 1) is the correct answer.

Remember, you cannot write in the test booklet on the GED test so you will have to keep the analysis in your head or make notes on the scratch paper as you eliminate some of the incorrect choices.

As you practice this strategy for reading charts and graphs on the GED Social Studies, Science, and Math Tests, remember to use the following three steps:

- 1) Read the question carefully noting any key words or phrases.
- 2) Analyze each choice eliminating the incorrect choices.
- 3) Choose from the remaining choices trying to select the best answer that addresses the exact question.



Answers are on pages 19 and 20.

Practice the steps on page 14 with the following questions about the graph on page 12.

- 1) Underline the key words or phrases first.
- 2) For this exercise, go ahead and cross out the possibilities that you eliminate right on the question.
- 3) Select your final answer.
- 4) Write an explanation about why the final answer is the best possible answer.

A. What can school officials learn from this data about helping children with social skills?

- 1) Most emphasis should be placed on group work with high school students.
- 2) Students in 7<sup>th</sup> and 8<sup>th</sup> grades do not see bullying as a problem so interventions are not needed.
- 3) Character education and self-esteem workshops may help decrease bullying.
- 4) Bullying is getting worse and should be addressed by school programs and counselors.
- 5) So few students are bullied that the school need not be concerned with it.

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B. If school officials want to provide group support for students who are bullied at school, what would probably be the most effective use of dollars to support this activity?

- 1) Provide special training for counselors and purchase materials for high schools.
- 2) Allocate equal dollars for training and materials to all grade levels.
- 3) Do not put money into group support for bullied students since there are so few involved.
- 4) Provide special training for counselors and purchase materials for middle schools.
- 5) Request that the elementary schools eliminate bullying so it will not be a problem after fifth grade.

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**Look for Key Words and Eliminate Possibilities**

## GED Exercise

1. Caleb wants to improve his algebra grade and is hoping to get a B in the course. His test grades are 76, 81, 84, and 73. What does he need to get on the fifth test to achieve an 80 average?

- 1) 75
- 2) 81
- 3) 84
- 4) 87
- 5) 90



2. A data set contains the numbers 9, 7, 6, 8, 7, and 5. Which statement is true about the measures of central tendency?

- 1) The mean is larger than the mode.
- 2) The mode is larger than the median.
- 3) The median is larger than the mean.
- 4) The mean and the median are the same.
- 5) The mode is smaller than the mean.

3. The Superior Software Company wants to create a graph for its annual report showing the rise and fall of dividends during the fiscal year. Which type of graph would best illustrate that data?

- 1) A pie chart
- 2) A line graph
- 3) A pictograph
- 4) A bar graph
- 5) A simple table

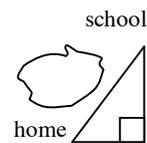
4. Barney read a bar graph that showed the favorite colors of 32 first graders at his school. The largest bar showed that 50% of the class liked red best. Half of that number liked blue best. The other colors had a few votes each. How many students chose colors other than red or blue?

- 1) 16
- 2) 15
- 3) 10
- 4) 9
- 5) 8



5. Philip took the shortcut home from school each day. He walked 130 yards through a field to his house. If he walked on the sidewalks, he would walk 120 yards south from the school and turn right and walk west the rest of the way to his house. How far is that leg of the trip?

- 1) 100 yards
- 2) 80 yards
- 3) 50 yards
- 4) 45 yards
- 5) 30 yards



6. Kyle put money in a savings account that earned 1.8% interest. He earned \$2.88 in interest in a year. What was the principal?

- 1) \$28.80
- 2) \$288.88
- 3) \$280.00
- 4) \$160.00
- 5) \$16.88

# Answers and Explanations

Words You Need to Know page 1

1. b.
2. a.
3. d.
4. c.
5. e.

Mr. Quinley's Class Attendance for March page 2

Title: Mr. Quinley's Class Attendance for March  
Labels: Days of the Week and Weeks of the Month

Average Daytime Summer Temperatures page 3

1. Palm Springs
2. Monterey
3. San Francisco, Monterey, Los Angeles
4. Possible answers include rainfall, humidity, wind.
5. Answers will vary.

Hand and Thumb Dominance page 3

Answers will vary. Show your table to your teacher or tutor.

About Math and Life page 4

Approximately 44%  
\$7480.00

Bar Graphs page 5

Per Capita Consumption of Turkey\*  
Nations  
Pounds  
2003 USDA Estimates  
8.3 pounds  
Brazil consumes 2.4 pounds less turkey per capita per year than Mexico.  
Answers will vary. Check with your teacher or tutor.  
4) 1) and 2)

Line Graphs page 6

U. S. Average Price of Gasoline per Gallon  
Price Per Gallon  
Months  
U. S. Bureau of Labor Statistics  
0.449 cents per gallon  
May, June, October, November  
The price of gasoline declined steadily during the summer.

Circle Graphs or Pie Charts page 7

Airline On-Time Statistics and Delay Causes  
Federal Aviation Administration OPSNET

Weather

19.17%

Equipment

4.14%

Answers will vary. Check with your teacher or tutor.

Mean page 8

- A. 76.4
- B. 11.46 gallons
- C. 442.5 acres
- D. 7.57

Median page 9

- A. 79
- B. 11.8
- C. 345
- D. 8

- A. 12.5
- B. 3

Mode page 10

- A. 1
- B. 10
- C. 666
- D. no mode
- E. 2 and 12 This is a bi-modal distribution.

Mixed Practice page 11

- 1. mean 2.33                      median 2.5                      mode 3                      range 0-5 or 5
- 2. Have your teacher or tutor check your bar graph.
- 3. mean 2.5                      median 3                      mode 3                      range 0-7 or 7

Measure Up page 11

- |                        |             |              |
|------------------------|-------------|--------------|
| 1/2 quart              | 2 pints     | 8 quarts     |
| 16 pints               | 2 cups      | 2 gallons    |
| 1.4 cup                | 6 teaspoons | 1/2 pint     |
| 8 ounces               | 32 ounces   | 12 quarts    |
| 1,000 milliliters (ml) | 32 pints    | 2 liters (l) |

Graphs on the Social Studies and Science Test page 12

- 1) Younger children are being bullied even more than older ones.
- 4) Bullying is getting worse and should be addressed by school counselors.

Out into Space

page 13

9  
2  
4 7 5 1 8  
3  
6

Other solutions may be possible.

Geometry Review

page 13

Area

- 1) 24 square feet
- 2) 4 square yards
- 3) 15 square inches
- 4) 113.04 cm<sup>2</sup>

Perimeter

- 1) 10 feet
- 2) 15 inches
- 3) 48 inches
- 4) 18.84 feet

Triangles

isosceles          right          equilateral

Angles

right          acute          obtuse          straight

Strategy Session

pages 14 and 15

What can be said about the **increase** in bullying as it applies to **the age of the child**?

- 1) Younger children are being bullied even more than older ones.
- ~~2) Older children are being bullied even more than younger ones.~~
- ~~3) The increase in bullying is the same no matter what the age.~~
- ~~4) Bullying has increased most at the 8<sup>th</sup> and 9<sup>th</sup> grades.~~
- ~~5) Bullying is a serious problem and must be stopped!~~

A. What can school officials learn from this data about helping children with social skills?

- ~~1) Most emphasis should be placed on group work with high school students.~~
- ~~2) Students in 7<sup>th</sup> and 8<sup>th</sup> grades do not see bullying as a problem so interventions are not needed.~~
- 3) Character education and self-esteem workshops may help decrease bullying.
- 4) Bullying is getting worse and should be addressed by school programs and counselors.
- ~~5) So few students are bullied that the school need not be concerned with it.~~

Although character education and self-esteem workshops may help decrease bullying, the best answer is 4). The school officials learned that bullying is increasing, so they really need to address it in some way.

B. If school officials want to provide group support for students who are bullied at school, what would probably be the most effective use of dollars to support this activity?

- ~~1) Provide special training for counselors and purchase materials for high schools.~~
- ~~2) Allocate equal dollars for training and materials to all grade levels.~~
- ~~3) Do not put money into group support for bullied students since there are so few involved.~~
- 4) Provide special training for counselors and purchase materials for middle schools.
- ~~5) Request that the elementary schools eliminate bullying so it will not be a problem after fifth grade.~~

The most effective use of dollars would probably be to put the money into middle schools where bullying affects the most students. Answer 3) can be eliminated because the question states that the school wants to provide group support.

GED Exercise

page 16

1. 4)
2. 4)
3. 2)
4. 5)
5. 3)
6. 4)