

MARIN COUNTY OFFICE  
OF EDUCATION



PARAEDUCATOR  
INSTRUCTIONAL AIDE TUTORIAL

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## TEN TIPS TO IMPROVE TEST PERFORMANCE

1. Read directions carefully and follow them
2. Budget your time wisely
3. Read each question completely
4. Look for key words
5. When in doubt, GUESS
6. Eliminate obvious wrong answers
7. Check other questions for clues
8. Answer easy questions first
9. Don't read too much into a question
10. Mark your answer sheet properly

**READING COMPREHENSION**

To answer these types of questions you must indicate the most appropriate statement relating to the selection on the basis of whether it: 1) accurately paraphrases portions of the selection; 2) adequately summarizes the selection; or 3) presents an inference that can reasonably be drawn from the selection.

**SAMPLE**

For the following item, read the paragraph and select the choice which best reflects the content of the passage.

**“The major causes of injuries are slips and falls. Tools, parts, and other objects should not be left lying around. Grease droppings, oils, sludge, and especially polymers should be cleaned up as soon as possible. Warning signs, railings and covers can protect against low piping, open tanks and open manholes or hatches. The simple knowledge of proper lifting techniques, such as bending the knees and lifting using the legs, can save many strained or injured backs.”**

According to the above paragraph, which one of the following is the primary cause of injury?

- a. improper lifting techniques
- b. grease or polymer burns
- c. slips and falls
- d. low piping

**Solution:** To answer this question, evaluate each choice.

Choice **a** lists improper lifting techniques as the primary cause of injury. The paragraph states only that “the simple knowledge of lifting techniques, bending the knees and lifting using the legs, can save many strained or injured backs”. Therefore this choice is incorrect.

Choice **b** lists grease or polymer burns as the primary cause of injury. The paragraph states only that “grease droppings, oils, sludge and especially polymers should be cleaned up as soon as possible”. Therefore this choice is incorrect.

Choice **c** lists slips and falls as the primary cause of injury. The paragraph states: “The major causes of injuries are slips and falls”. **This choice is correct.**

Choice **d** lists low piping as the primary cause of injury. The paragraph states only that “warning signs, railings, and covers can protect against low piping, open tanks and open manholes or hatches”. Therefore this choice is incorrect.

**SAMPLE**

The following paragraph may not be in logical sequence. Read the sentences and select the best order for them.

(1) Shoppers are tired of battling crowds at malls and shopping centers. (2) One drawback is the delay in receiving merchandise, but some Internet vendors offer fast shipping for an additional fee. (3) They also enjoy the convenience of being able to shop 24 hours a day, seven days a week. (4) Holiday shopping on the Internet has grown dramatically in the past few years.

- a. 2, 1, 3, 4
- b. 4, 1, 3, 2
- c. 1, 4, 2, 3
- d. correct as written

**Solution:** To answer this question, evaluate each choice.

Choice **a** is incorrect because the sentences are not logically ordered: it first presents a supporting sentence (a sentence that is an extension of another idea), then two sentences that don't necessarily relate to the first (but flow with one another), and a closing sentence that is disjointed from the first three sentences.

Choice **b** presents the sentences in a logical order: a topic sentence, 2 supporting sentences, and a closing sentence that could transition to another paragraph. **This choice is correct.**

Choice **c** is incorrect because the sentences are not logically ordered: it presents a topic sentence, then two sentences that relate to the topic and each other, but don't directly develop the topic sentence, and a closing sentence that is disjointed from the first three sentences.

Choice **d** is incorrect because the sentences are not logically ordered: it presents a topic sentence, then one sentence that does not relate to the first (since Internet shopping hasn't been introduced yet), a third sentence that is misplaced, and a closing sentence that is disjointed from the first three sentences.

**KEY WORD**

In certain multiple choice questions there will be key words that need to be considered when selecting answers. Examples of key words are best, worst, first, only, and never.

**SAMPLE**

A child has fallen and is bleeding. The first thing you should do is

- a. call a doctor
- b. apply a bandage to the wound
- c. wash the wound
- d. apply direct pressure to the wound

**Solution:** The key word is "first". Although the other steps may be taken, the first step is to control the bleeding by applying direct pressure. Choice **d** is therefore correct.

Understanding the following terminology will help you determine what the question asks for.

**Synonyms** are words that are the same in meaning.

**Antonyms** are words that are opposite in meaning.

**Verbs** are words that show action.

**Adverbs** are words that modify verbs.

**Nouns** are words that name a person, place, thing or idea.

**Pronouns** are words that take the place of one or more nouns.

**Adjectives** are words that modify or describe a noun or pronoun. It answers the questions: what, which one, how much, and how many?

**Conjunctions** are words that join together words, phrases, clauses, or sentences.

**Prepositions** are words that show a relationship between a noun or pronoun and another word in the sentence such as, from, to, between, through, etc.

If you do not have a common denominator (see simplifying fractions), make one by multiplying the first denominator and the second denominator together.

<b>SAMPLE</b>	$\frac{3}{5} + \frac{2}{7}$
Find the common denominator by multiplying five by seven	$5 \times 7 = 35$
To get new numerators, multiply the numerator by the same number as the denominator was multiplied by	$3 \times 7 = 21$ $2 \times 5 = 10$
Insert the new numbers into the numerator and add the fractions	$\frac{21}{35} + \frac{10}{35}$
Answer	$\frac{31}{35}$

### MULTIPLYING FRACTIONS

Multiply the numerator times the numerator and the denominator by the denominator.

<b>SAMPLE</b>	$\frac{1}{4} \times \frac{3}{5}$
	$\frac{1 \times 3}{4 \times 5}$
Answer	$\frac{3}{20}$

Simplify (see *SIMPLIFYING FRACTIONS*) the fraction before and after you multiply.

<b>SAMPLE</b>	$\frac{12}{15} \times \frac{5}{6}$
Simplify $\frac{12}{15}$ by dividing both numbers by 3	$\frac{12 \div 3}{15 \div 3} \times \frac{5}{6}$
	$\frac{4}{5} \times \frac{5}{6}$
	$\frac{20}{30}$
Simplify by dividing by 10	$\frac{20 \div 10}{30 \div 10}$
Answer	$\frac{2}{3}$

### DIVIDING FRACTIONS

Since division is the opposite of multiplication, first invert (flip over) one fraction and multiply.

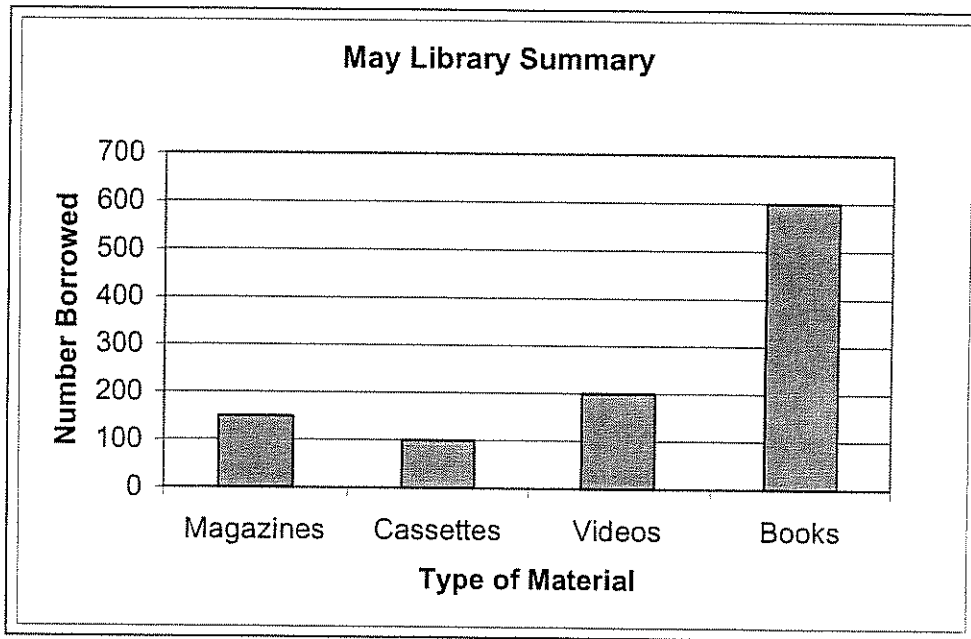
<b>SAMPLE</b>	$\frac{1}{5} \div \frac{2}{3}$
Invert $\frac{2}{3}$ and multiply	$\frac{1 \times 3}{5 \times 2}$
Answer	$\frac{3}{10}$

**READING TABLES AND CHARTS**

Some questions test the ability to understand, interpret and use information in tables and charts. Often answering these questions depends on looking in the correct places for information. It is important to know that the horizontal row at the bottom is the x-axis and the vertical column on the left side is the y axis.

**SAMPLES**

Use this chart to answer the following questions.



According to the May Library Summary, what was the number of videos borrowed in May?

- a. 100
- b. 150
- c. 200
- d. 300



**STATISTICS**

Find the average (also known as the mean) by dividing the sum of the data and dividing that by the number of data elements.

<b>SAMPLE</b>	<b>What is the average of 79, 67, 81, 99, 88, and 72?</b>
<i>The six data elements</i>	79, 67, 81, 99, 88, and 72
<i>Add the numbers</i>	$79 + 67 + 81 + 99 + 88 + 72 = 486$
<i>Divide by the number of data elements</i>	$486 \div 6$
<i>Answer</i>	<b>81</b>

**EXPONENTS**

An exponent is a superscript, or small number written at the top right corner of a number, variable, or parenthesis (for example:  $3^4$ ). This tells you to multiply 1 by the number as many times as the exponent says.

<b>SAMPLE</b>	<b>Simplify <math>3^4</math></b>
<i>Multiply one by three multiplied by itself four times</i>	$1 (3 \times 3 \times 3 \times 3)$
	$1 (81)$
<i>Answer</i>	<b>81</b>

<b>SAMPLE</b>	<b>Simplify <math>-3^4</math></b>
<i>The location of the negative sign is not contained by parenthesis, so the sign will be attached at the end</i>	$-3^4$
<i>Simplify the exponent first</i>	$1 (3 \times 3 \times 3 \times 3)$
	$1 (81)$
	81
<i>Add the negative at the end</i>	- 81
<i>Answer</i>	<b>- 81</b>

<b>SAMPLE</b>	<b>Simplify <math>(-3)^4</math></b>
<i>The location of the negative sign is contained in the parenthesis</i>	$(-3)^4$
<i>Instead of carrying down the negative sign, each three is made negative</i>	$1 (-3 \times -3 \times -3 \times -3)$
	$1 (81)$
	81
<i>Answer</i>	<b>81</b>

When multiplying exponents, add the superscripts

<b>SAMPLE</b>	<b>Simplify <math>x^{16}x^2</math></b>
<i>Add the superscripts <sup>16</sup> and <sup>2</sup></i>	$x^{16+2}$
<i>Answer</i>	$x^{18}$

# PRE-ALGEBRA AND ALGEBRA

## SPECIAL NOTATION FOR MULTIPLICATION AND DIVISION WITH VARIABLES

Here are some examples of special notations and what they mean:

$2b$  means  $2 \times b$

$2(a + 5)$  means twice the sum of a number ( $a$ ) and five

$bc$  means  $b \times c$

$4bc$  means  $4 \times b \times c$

$d/5$  means  $d \div 5$

## ALGEBRA WORD PROBLEMS

In algebra you solve problems by essentially making two groups, one for each side of an equation. An unknown number or value is represented by a letter (for example:  $x$ ).

### BASIC STEPS

- 1) Define the variable
- 2) Translate the problem into an equation and plug in known values
- 3) Solve the equation
- 4) Go back to the problem and plug in the new value to obtain the answer

<b>SAMPLE</b>	<b>A car dealership has 15 new cars and 12 used cars. How many cars do they have?</b>
<i>Define the unknown variable</i>	Let $x$ = Total Cars
<i>Translate the problem into an equation and plug known values in</i>	$15 + 12 = x$
<i>Solve the equation</i>	$27 = x$
<i>Answer</i>	<b>There are 27 Total Cars.</b>

### CONSECUTIVE INTEGER WORD PROBLEMS

<b>SAMPLE</b>	<b>Two consecutive numbers have a sum of 71. What are the numbers?</b>
<i>Define the unknown variables: Since two numbers are unknown, in order to solve it you must use only one variable (such as <math>x</math>) in the equation.</i>	Let $x$ = The First Consecutive Number Let $x + 1$ = The Second Consecutive Number
<i>Translate the problem into an equation and plug known values in</i>	$x + (x + 1) = 71$
<i>Solve the equation</i>	$x + (x + 1) = 71$
<i>Remove parenthesis</i>	$2x + 1 = 71$
<i>Subtract 1 from each side</i>	$-1 + 2x + 1 = 71 - 1$ $2x = 70$
<i>Divide both sides by 2</i>	$\frac{2x}{2} = \frac{70}{2}$ $x = 35$
<i>Go back to the problem and plug in new values</i>	$35$ = The First Consecutive Number $35 + 1$ = The Second Consecutive Number
<i>Answer</i>	<b>35 &amp; 36</b>

### 1. Combine like terms

Combine or add up all of the like terms.

Examples of like terms:

2x, 45x, x, 0x, -26x, -x because they are all x with a coefficient  
 15, -2, 27, 9043, 0.6 because they are all constants  
 3y<sup>2</sup>, y<sup>2</sup>, -y<sup>2</sup>, 26y<sup>2</sup> because they are all y<sup>2</sup> with a coefficient

For comparison, below are a few examples of unlike terms:

17x, 17z because they are different letter variables  
 15y, 19y<sup>2</sup>, 31y<sup>5</sup> because they are different powers or exponents  
 19x, 14xy because they both have the letter y but the second term has another variable in it

<b>SAMPLE</b>	<b>5x + 7x</b>
Add like terms	5x + 7x = 12x
Answer	<b>12x</b>

<b>SAMPLE</b>	<b>14a + 7 + 21a</b>
Organize like terms together	14a + 21a + 7
Add like terms	14a + 21a + 7 = 35a + 7
Answer	<b>35a + 7</b>

### 2. Simplify multiplication

#### Same Variables

When multiplying same letter variables, keep the letter and add exponents.

<b>SAMPLE</b>	<b>a × a</b>
Neither a has a visible exponent, so their exponents are both 1	a <sup>1</sup> × a <sup>1</sup>
Add the exponents	a <sup>1+1</sup> = a <sup>2</sup>
Answer	<b>a<sup>2</sup></b>

<b>SAMPLE</b>	<b>a × a<sup>4</sup></b>
The first a doesn't have a visible exponent, so its exponent is 1	a <sup>1</sup> × a <sup>4</sup>
Add the exponents	a <sup>1+4</sup> = a <sup>5</sup>
Answer	<b>a<sup>5</sup></b>

#### Different Variables

<b>SAMPLE</b>	<b>y<sup>5</sup> × a<sup>2</sup></b>
The terms cannot be multiplied by simply adding the exponents because each multiplier is a different letter	y <sup>5</sup> × a <sup>2</sup>
Answer	<b>y<sup>5</sup>a<sup>2</sup></b>

<b>SAMPLE</b>	<b>a<sup>2</sup> × a<sup>3</sup>y<sup>2</sup></b>
Add the exponents of a <sup>2</sup> and a <sup>3</sup>	a <sup>5</sup> × y <sup>2</sup>
Answer	<b>a<sup>5</sup>y<sup>2</sup></b>

**WAYS TO OBTAIN THE PRIME FACTOR**

- Repeatedly divide by prime numbers.
- Choose any pair of factors and split these factors until all the factors are prime.
- Work backwards from the answers, seeing which one is BOTH only prime numbers, and produces the correct product

<b>SAMPLE</b>	<b>What is the prime factorization for 68?</b>
<i>Divide by 2 (a prime number)</i>	$68 \div 2 = 34$
<i>The correct way to represent prime factorization</i>	$2 \times 34$
<i>Divide 34 by 2 and you are left with 17 (a prime number)</i>	$34 \div 2 = 17$
<i>Answer</i>	$2 \times 2 \times 17$

**GREATEST COMMON FACTOR (GCF/GCD)**

The **greatest common factor** is the largest integer that is a common factor of all the given integers.

**FIND THE GCF BY:**

- Finding the prime factorization of each integer.
- The GCF is the product of all prime factors common to every number.

<b>SAMPLE</b>	<b>What is the greatest common factor of 8 and 44?</b>
<i>Find the prime factorization of each integer</i>	$8 = 2 \times 2 \times 2 \times 1$ $44 = 2 \times 2 \times 11 \times 1$
<i>List the common prime factors</i>	8: $2 \times 2 \times 1$ 44: $2 \times 2 \times 1$
<i>Multiply the common prime factors</i>	$2 \times 2 \times 1 = 4$
<i>Answer</i>	<b>4</b>

**LEAST COMMON DENOMINATOR (LCD/LCM)**

The **least common denominator** (multiple) is the smallest integer that is a common multiple (denominator) of the given integers.

**FIND THE LCD BY:**

- Finding the prime factorization of each integer.
- Take the greatest power on **each** prime and multiply them to obtain the LCD.

<b>SAMPLE</b>	<b>What is the least common denominator of 12, 50, and 90?</b>
<i>Find the prime factorization of each integer</i>	$12 = 2 \times 2 \times 3 \times 1$ $50 = 2 \times 5 \times 5 \times 1$ $90 = 2 \times 3 \times 3 \times 5 \times 1$
<i>List the prime factors with the greatest power of all the given integers</i>	12: $2^2$ 50: $5^2$ 90: $3^2$
<i>Multiply the prime factors</i>	$2^2 \times 5^2 \times 3^2$
<i>Answer</i>	<b>900</b>

<b>SAMPLE</b>	<b>Factor the trinomial:</b> $x^2 - 4x - 32$
Reverse the FOIL method to get the factored form	$x^2 - 4x - 32$
Since $x$ multiplied by itself equals $x^2$ , place one $x$ in each parenthesis	$(x +/- \underline{\quad})(x +/- \underline{\quad})$
Since the signs on the 2 <sup>nd</sup> and 3 <sup>rd</sup> trinomial terms are both negative, the signs of the second term in each factor must be opposite	$(x - \underline{\quad})(x + \underline{\quad})$
What two numbers multiplied by one another would equal 32?	Possibilities: 32 and 1 16 and 2 8 and 4
Since the signs on the 2 <sup>nd</sup> and 3 <sup>rd</sup> trinomial terms are both negative, the larger multiple will have a negative sign	Possibilities: -32 and 1 -16 and 2 - 8 and 4
Out of the possibilities, which pair added to one another equals -4?	- 8 and 4
Plug these into the equation	$(x - 8)(x + 4)$
Check your work by using FOIL on the two factors	$x^2 - 8x + 4x - 32$
Simplify	$x^2 - 4x - 32$
Answer	$(x - 8)(x + 4)$

### POLYNOMIALS

There is no shortcut to factoring polynomials. First memorize some special types of polynomials, and then practice. Here are some extremely useful polynomial identities:

Perfect squares

$$a^2 + 2ab + b^2 = (a + b)^2$$

$$a^2 - 2ab + b^2 = (a - b)^2$$

Difference of squares

$$a^2 - b^2 = (a + b)(a - b)$$

Others

$$(a + b) \times c = ac + bc$$

$$(a - b) \times c = ac - bc$$

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

### STRATEGIES

- **FIRST**--always factor as much as you can! Often all terms in an expression have a common factor, first group the like terms and then find the greatest common factor and extract it (this is like the distributive law in reverse).
- Look for perfect squares:  
 $a^2 + 2ab + b^2 = (a + b)^2$   
 $a^2 - 2ab + b^2 = (a - b)^2$
- Look for the difference of squares:  
 $a^2 - b^2 = (a + b)(a - b)$
- Factor by trial and error
- Reverse the FOIL method to get the factored form:
  1. Set up a product of two expressions, where parentheses hold each of the two expressions.
  2. Find the factors that go in the first positions.
  3. Find the factors that go in the last positions.
- Check your work

<b>SAMPLE</b>	If $14 = j - (-20)$ , what is the value of $j$ ?
	$14 = j - (-20)$
<i>Subtracting a negative number is the same as adding a positive number</i>	$14 = j + 20$
<i>Subtract 20 from both sides</i>	$-20 + 14 = j + 20 - 20$
<i>Answer</i>	$-6 = j$

<b>SAMPLE</b>	How is the product $3 \times 3 \times 3$ expressed in exponential notation?
<i>Set up the equation</i>	$3^1 \times 3^1 \times 3^1$
<i>When multiplying, add the exponents</i>	$3^{1+1+1}$
<i>Answer</i>	$3^3$

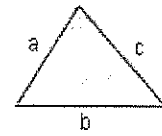
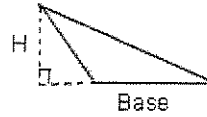
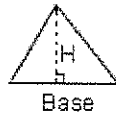
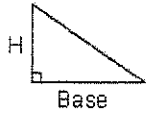
<b>SAMPLE</b>	What is the value of $3t^5$ if $t = 2$ ?
<i>Replace <math>t</math> with 2</i>	$3(2^5)$
<i>Simplify exponents</i>	$3(2 \times 2 \times 2 \times 2 \times 2)$
	$3(32)$
<i>Answer</i>	<b>96</b>

<b>SAMPLE</b>	Simplify $2(a + 5)$
<i>Distribute the 2 to parenthesis</i>	$2(a) + 2(5)$
<i>Answer</i>	<b><math>2a + 10</math></b>

<b>SAMPLE</b>	Simplify $(-4a^5b)(8a^2)$
<i>Multiply like terms beginning with -4 and 8</i>	$-32(a^5b)(a^2)$
<i>Multiply <math>a^5</math> and <math>a^2</math></i>	$-32(a^7)(b)$
<i>Answer</i>	<b><math>-32a^7b</math></b>

<b>SAMPLE</b>	Solve $\frac{10}{y} = \frac{7}{y+3}$
<i>Cross multiply</i>	$10(y+3) = 7y$
<i>Solve for <math>y</math>, begin by distributing the 10</i>	$10y + 30 = 7y$
<i>Combine like terms, begin by subtracting <math>10y</math> from both sides</i>	$-10y + 10y + 30 = 7y - 10y$
	$30 = -3y$
<i>Divide both sides by -3</i>	$\frac{30}{-3} = \frac{-3y}{-3}$
<i>Answer</i>	<b><math>-10 = y</math></b>

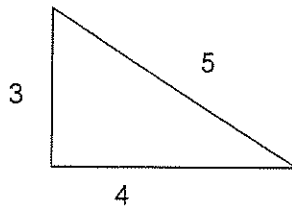
<b>SAMPLE</b>	<b>What are the coordinates of the x-intercept of the line <math>4y - x = 5</math>?</b>
<i>Set up the equation</i>	$4y - x = 5$
<i>Set <math>y = 0</math> and solve for <math>x</math></i>	$4(0) - x = 5$
	$-x = 5$
	$(-1)-x = (-1) 5$
<i>Multiply both sides by -1</i>	$x = - 5$
<i>Answer</i>	<b><math>(- 5, 0)</math></b>



- A hypotenuse is the side of a right triangle that is opposite the right ( $90^\circ$ ) angle. By using the Pythagorean theorem one can find the length of an unknown side of a right triangle.
  - The Pythagorean Theorem is:  $a^2 + b^2 = c^2$ , where  $c$  equals the hypotenuse.

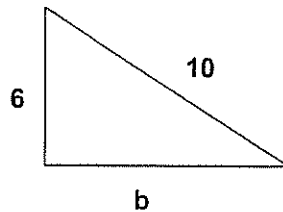
**SAMPLE**

In the right triangle below, the length of side  $a = 3$ , the length of side  $b = 4$  and the hypotenuse (side  $c$ ), has a length of 5. Using the Pythagorean Theorem ( $a^2 + b^2 = c^2$ ), we see that  $3^2 + 4^2 = 5^2$ .



**SAMPLE**

Determine the length of side  $b$ , given that side  $a = 6$  and side  $c = 10$



Use the Pythagorean Theorem	$a^2 + b^2 = c^2$
Plug in known values	$6^2 + b^2 = 10^2$
Combine like terms (subtract $6^2$ from both sides)	$b^2 = 10^2 - 6^2$
Simplify exponents $(1 \times 10 \times 10) - (1 \times 6 \times 6)$	$b^2 = 100 - 36$
	$b^2 = 64$
Obtain the square root of 16 ( $b^2 = 8^2$ )	$\sqrt{b^2} = \sqrt{64}$
Answer	$b = 8$



D

<b>Diameter</b>	Any line segment that passes through the center of the circle connecting two points on the circle.
<b>Difference</b>	The answer in subtraction.
<b>Distributive Property</b>	For any numbers a, b, and c, $a(b + c) = ab + ac$ and $(b + c)a = ba + ca$ .
<b>Divisible</b>	A number is divisible by another number if the remainder is 0 after dividing.

E

<b>Equation</b>	An expression with a variable and an equal sign.
<b>Equivalent</b>	Fractions that name the same number. $1/2$ , $2/4$ , and $3/6$ are equivalent fractions.
<b>Estimate</b>	An approximate rather than an exact answer.
<b>Evaluate</b>	To find the value of an expression by replacing variables with numbers.
<b>Even number</b>	A number that ends in 0,2,4,6 or 8.
<b>Exponent</b>	In $10^3$ , the exponent is 3. The exponent tells how many times the base, 10 is used as a factor. $10^3 = 10 \times 10 \times 10$ .

F

<b>Factor</b>	Numbers or symbols that when multiplied together form a product or that divide another number or symbol.
<b>Formula</b>	An equation that states a rule for the relationship between certain quantities.
<b>Fraction</b>	A number that shows part of a whole unit. Example: $1/2$

G

<b>Graph</b>	A drawing used to show information.
<b>Greater Than (&gt;)</b>	The symbol used to compare two numbers or equations when the greater number is on the left.
<b>Greater Than (<math>\geq</math>)</b>	The symbol used to compare two numbers or equations when the greater or equal number is on the left.
<b>Greatest Common Factor (GCF)</b>	The largest integer that is a common factor of all the given integers.
<b>Grid</b>	Parallel and perpendicular line segments on which points are plotted.

O

- Odd Number** A number that ends in 1,3,5,7, or 9.
- Ordered Pair** A pair of numbers that give the location of points on a coordinate grid.

P

- Parentheses ( )** Grouping symbols. They can show which operation should be done first or multiplication in equations such as  $2(3 + 4) = 2 \times 7$ .
- Percent** A ratio with a denominator of 100. For example 5% and  $5/100$  name the same number.
- Perimeter** The distance around the outside of a figure.
- Perpendicular Lines** Lines that intersect to form right angles.
- Pi (•)** The ratio of the circumference of a circle to the diameter of a circle.  
• = 3.14.
- Plot** To locate and mark the point named by an ordered pair on a grid.
- Point** An exact location. Points are usually named with capital letters.
- Positive Number** Any number greater than zero.
- Prime Number** A positive integer greater than one that can only be divided by itself and one.
- Probability** The chance that an event will happen.
- Product** The answer in multiplication.
- Property of One for Division** Any number divided by 1 is that number. Any number except 0 divided by itself is 1.
- Property of One for Multiplication** The product of any number and 1 is that number.

Q

- Quotient** The answer in division.

R

- Radius** Any line segment that connects the center of a circle to a point on the circle.
- Range** The difference between the greatest number and the least number in a set of data.
- Ray** Part of a line. It has one endpoint and continues on and on in one direction.

Y

**y-intercept**

The point where the line crosses the y-axis (when  $x=0$  in an equation).

Z

**Zero Property of  
Division**

Zero divided by any number except zero is zero. You cannot divide a number by zero.

**Zero Property of  
Multiplication**

The product of any number and zero is zero.

## **WRITING SAMPLE**

For writing samples, you are given a topic to write on and instructions which clarify what to pay attention to while writing (this is called a prompt). Often there is a time limit as well.

Your handwriting needs to be CLEAR. If the reader has to spend time deciphering your writing, you may score lower.

Here are some other tips for completing the writing sample:

### **ORGANIZE YOUR THOUGHTS AND WRITE CLEARLY**

- Clearly cover all of the ideas suggested in the prompt.
- Give a clear sense of the purpose of your writing by beginning with a meaningful introductory sentence describing the topic
- A complete essay includes an introduction, a body, and a conclusion.
- Give specific details (don't include irrelevant details) and create concrete images and examples that support the topic and main points.
- Vary your sentences so the sample is appealing to read.
- Link your ideas.
- Know your audience and purpose and choose your language accordingly.

### **CORRECTLY USE CAPITAL LETTERS, PUNCTUATION, WORDS, AND SENTENCE STRUCTURE**

- Capitalize proper nouns and use "I".
- Use commas in a series.
- Do not depend on slang; use proper English (subject-verb agreement; case and reference of pronouns).
- Use clear sentences with few run-ons and few or no fragments.
- Begin and end sentences correctly.
- ALWAYS proofread for grammar, spelling, punctuation, and sentence structure errors.