

Kingsborough Community College
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Brooklyn, New York 11235

TASC/GED (HSE51/KS11) – English – Testing and Placement

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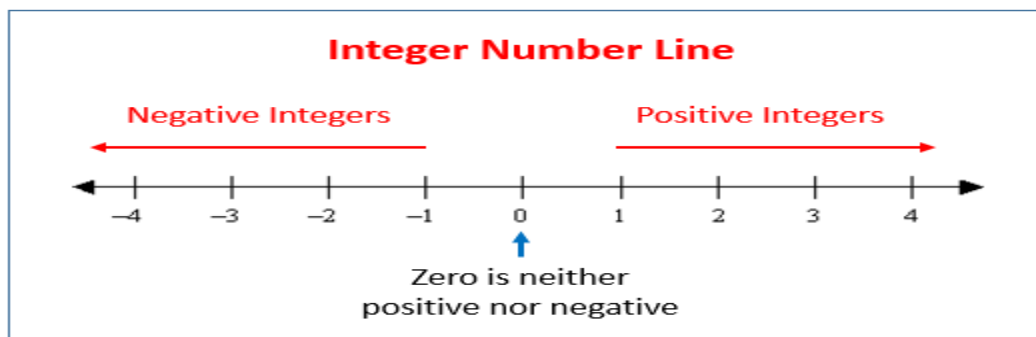
Lesson # 1

Subject: Math

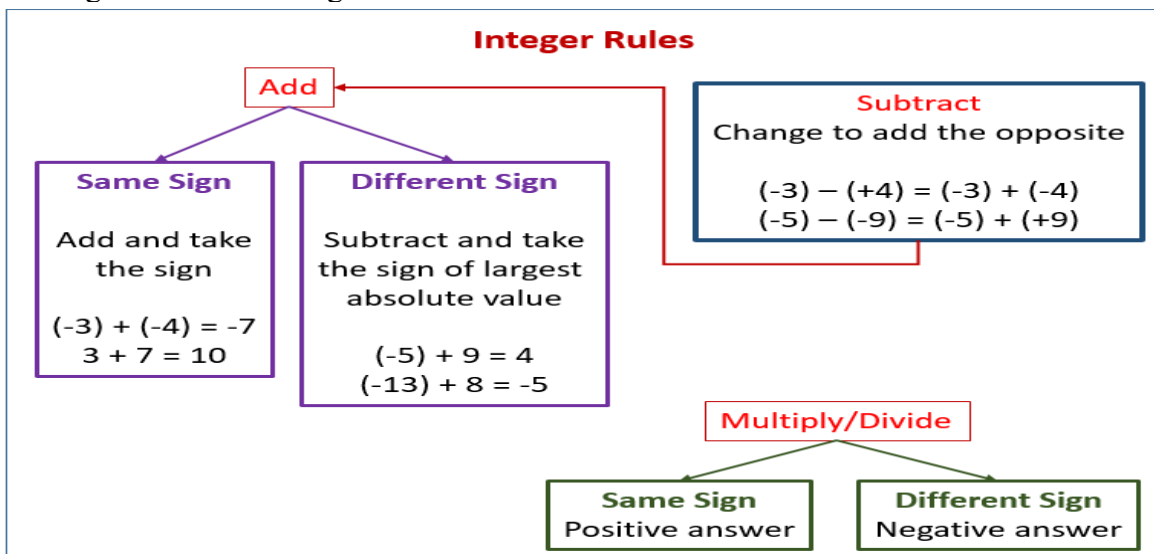
Topics to discuss: (*Integers - 316*) (*Order of Operations - 324*) (*Absolute Value – 326*) (*Power (Exponents) Roots & Radicals - 320*)

Objective: Students should be able to read, interpret and compute mathematical equations and verbal problems by following the rules of math taught and discussed in class.

Integers – any natural number that is not a fraction or decimal (whole number) that can be a positive or negative sign.



Rules of Integers based on its sign.



Order of Operations	
$() , [] , \{ \}$	Parentheses, Brackets, Braces
$x^a , \sqrt{\quad}$	Exponents, radicals
\times , \div	Multiplication, Division
$+, -$	Addition, Subtraction

A Key To The Laws Of Exponents

Law	Example
$a^m a^n = a^{m+n}$	$2^3 2^4 = 2^{3+4} = 2^7 = 128$
$(a^m)^n = a^{mn}$	$(2^3)^4 = 2^{3 \cdot 4} = 2^{12} = 4096$
$(ab)^n = a^n b^n$	$(20)^3 = (2 \cdot 10)^3 = 2^3 \cdot 10^3 = 8 \cdot 1000 = 8000$
$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$	$\left(\frac{2}{5}\right)^3 = \frac{2^3}{5^3} = \frac{8}{125}$
$\frac{a^m}{a^n} = a^{m-n}$	$\frac{2^5}{2^3} = 2^{5-3} = 2^2 = 4$
$\frac{a^m}{a^n} = \frac{1}{a^{n-m}}$	$\frac{2^3}{2^5} = \frac{1}{2^{5-3}} = \frac{1}{2^2} = \frac{1}{4}$

Absolute Value (326)– Is the number of its distance from one number to another. It must always be positive.

Symbol for Absolute Value is: (| |) Example $|-5| = |5|$

Example - $20 | 17 = -340$
 $20 | + 17 = 340$

Absolute Value in a Algebraic Expression

Hints:

- Symbol - (| |) (parallel lines)
- Absolute value is the distance from 0 on a number line.

- An absolute value is never negative
- Often in an equation involving absolute values will have two solutions

Solving an equation by substituting to its original equation.

$$3|x| + 5 = 8$$

$$3|x| + 5 - 5 = 8 - 5 \text{ (substitute on both sides)}$$

$$3|x| = 3$$

$$3x/3 = 3/3$$

$$|x| = 1$$

$$x = 1 \text{ or } x = -1$$

$$6|x| - 9 = 15$$

$$6|x| - 9 + 9 = 15 + 9 \text{ (add 9 to both sides)}$$

$$6|x| = 24$$

$$\frac{6|x|}{6} = \frac{24}{6}$$

$$|x| = 4$$

$$x = 4 \text{ or } x = -4$$

Order of Operations (324)– is to follow a sequence pattern in math. (PEMDAS - FOIL)

- Parenthesis ()
- Brackets []
- Braces { }
- Fraction Bar ___

Hints:

- First evaluate the grouping symbols. The innermost grouping symbol and work outward (inside out)
- Eliminate all exponents and square roots
- Multiply and divide in order from left to right
- Add and subtract

Example # 1

$$3^2 (3 + 5) + 3$$

$$3^2 (8) + 3$$

$$9 (8) + 3$$

$$72 + 3$$

$$= 75$$

$$\frac{5(8-3)-2^2}{3+2(3^2-7)}$$

$$\frac{5(5) - 2^2}{3 + 2(9 - 7)}$$

$$\frac{5(5) - 4}{3 + 2(2)}$$

$$\frac{25-4}{3+4}$$

$$\frac{21}{7} = 3$$

Definition – Is the mathematical expression of a number that raises the power of how many times a number will be multiplied.

$$3^3 = 27 \text{ or } 3 \times 3 \times 3 = 27$$

How to calculate exponents?

Base → 2

Exponent or index → 4
Tells how many times to multiply the base by itself

$$2^4 = 2 \times 2 \times 2 \times 2 = 16$$

- Symbol ($\sqrt{\quad}$)

Example: $\sqrt{144} = 12$ Verify – Check your work - $12^2 = 144$ $12 \times 12 = 144$
 $\sqrt{16} = 4$ $4^2 = 16$ $4 \times 4 = 16$

*These are known as Perfect Square Root because they have no remainder

Radicals/Radicand – Imperfect Numbers

Definition are numbers (more or less) in the 3rd, 4th, etc. power. They must be simplified/reduced to its lowest term.

Rules:

- Look at the operation first
- Choose the number that can be simplified
- Square the number

Example: $\sqrt{75} \approx 8.66025403...$

Radicand Form:

$$\begin{aligned} &\sqrt{25 \times 3} \\ &\sqrt{25} \sqrt{3} \\ &5 \sqrt{3} \end{aligned}$$

Example: $\sqrt[3]{45} \approx 6.7082039....$

Radical Form $\sqrt[3]{9 \times 5}$

$$\begin{aligned} &\sqrt[3]{9} \sqrt[3]{5} \\ &3 \sqrt[3]{5} \end{aligned}$$

Subject: Reading

Topic: Main Idea and Supporting Details (60)

Main Idea – Is the central part and the most important message in a story, article, novel, etc. in which the writer wants to get across to the reader.

Supporting Details – Are the facts, evidence, description from any piece of reading; that help support the main idea.

Excerpt – Ariadne's Thread

Background Discussion – Story of a young woman, who falls in love with Theseus. She decides to help him by giving him a roll of thread to make his way down the labyrinth, kill the Minotaur and finding his way out. Once Theseus is out, he takes Ariadne with him, but leaves her stranded on an island. Ariadne is devastated a, but comforted by Dionysious. As time goes by, he returns to find out that Ariadne is dead.

Key Concepts:

Labyrinth – network passage/chamber/puzzle, that at times is difficult to find your way out.

Chickesaw / Choctaw – (Named by two brothers) Native warriors – residents of Alabama and Mississippi.

The theme of this story (Chickasaw/Choctaw) Natives also believed in their gods/deities. She is trying to solve her problem, which seeking for a home. Looking for her compass, her direction.

At times we find ourselves stuck with multiple situations, and we tend to look for guidance, in order to meet our destination.

Rephrasing and Summary – Retelling a story in your own words (verbal or editing)

Steps to follow:

- Preview the reading book (talk about titles, pictures, etc.)
- Read the book, article, etc
- Summarize important events, write it down (look for clues)
- Re-read – go over in case there was something that you many have forgotten
- Publish the writing (final work)

Excerpt – “Excerpt of a Business Letter” (63)

- Look for key information (Skimming and Scanning)
- Make sure that the topic is still on target
- List the key points
- Conclude/wrap up the main idea of the text

Skimming – the use of eyes and mind read over quickly in a text (general idea)

Most topic sentence is always the 1st sentence in a paragraph. Always read it in full content when skimming as it will lead you to a brief summary of the paragraph's subject and help you to gain a general idea of the content.

Scanning – Method of searching the “key words” to find out specific information.

Subject – Writing (116)

Topic: Simple Sentences, - Compound and Complex Sentences

Definitions

- Sentence – is a complete statement with one subject and a verb. (independent clause)
- Subject – a person, place or thing in which is being talked about in a sentence (noun)
- verb – tells what action the subject is doing
- action verb – verb that describes action
- linking verb – coonects the subject with the verb and gives information about the subject
- fragment – is an incomplete thought/sentence, in which might be missing a subject or a verb.

A sentence should always end with the correct punctuation mark.

- period and a command (.)
- question (?)
- exclamation (!)

Notes: During the TASC exam there will be sentences that are missing information (fragment) correct and rewrite the sentence by:

- adding a subject
- adding a verb
- incomplete thought, make it complete

Compound and Complex Sentences (118)

Definitions:

Compound sentence – are two or more independent sentences joined together, to make a compound sentence.

Coordinating conjunction – words used to combine independent clauses together (and, but, or, nor, for, so and yet.)

Complex Sentence/ Subordinate Clause – has a subject and verb, but does not express a complete thought. It begins with a subordinate conjunction.

Note: During the TASC exam, you must remember to choose the correct word or phrase and the relationship between the idea. (meaning)

Subject – Social Studies/History (438)

Topic –Exploration, Colonialism and the American Revolution

Background information:

The first Americans traveled from Europe to North America (New World) in search of better lives, wealth, and practice their religion freely. This began from the years 1400s to the 1600s.

This was known as the Age of Discovery. Many Europeans began to claim territories in North America and expand their religion, culture, influences, etc. in the new land.

The three main reasons for exploration were:

- Religious freedom
- Gold
- Seek a reputation/ honor/glory

Over time with all the exploration, this led to many tragedies such as:

- death
- diseases
- enslaved

- forced out of their land

In the years of the 1600s, the Pilgrims began to establish themselves. (Massachusetts) A large number of slaves were taken from Africa to the Southern colonies and forced to work in plantations.

There were positive as well as negative effects in the early 1700s. These were the:

- *Wars – French Indian War to obtain control and recovery of the Thirteen Colonies and also to pay the debts of the war
- War for Independence – Continental Congress – George Washington lead an army in which later led to the signed document known as the Declaration of Independence on July 4, 1776.
- American Revolution – led to the surrender of Britain and to sign a treaty to end the war, and recognize the Independence of America.

Finally, the written document known as the Articles of Confederation – It was approved during the Second Continental Congress, on November 1777. This states the separation/independence from Britain.

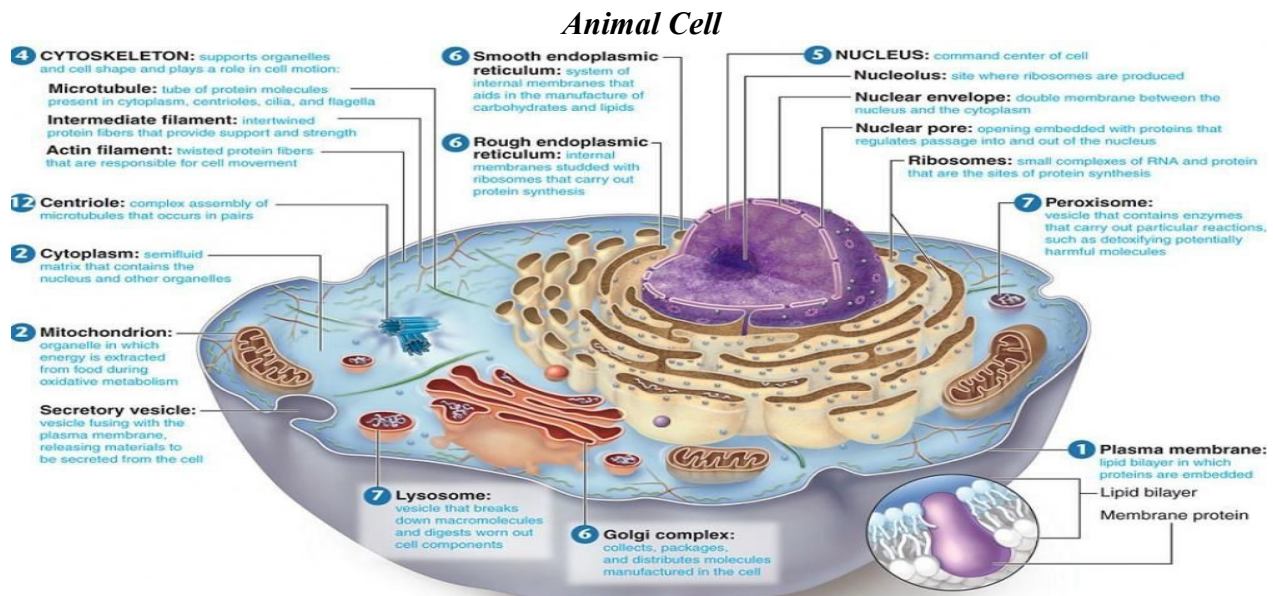
In 1778, the principals of the government were established in the Constitution and ratified. It is a very powerful government, in which the first ten amendments/ Bill of Rights are granted to the citizens of any state.

Subject- Science (518)

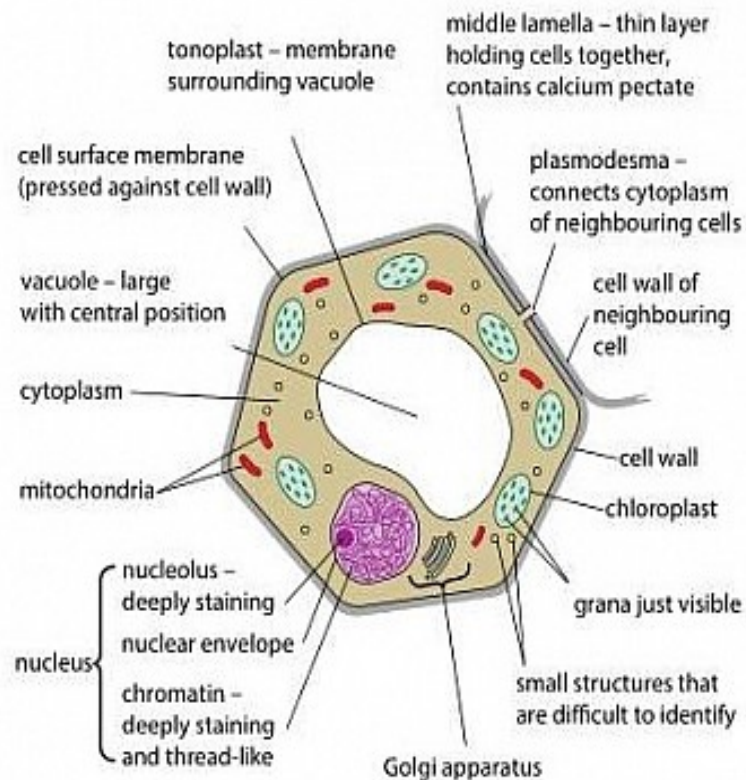
Topic: Cells

Definition – unit of an organism, consisting of many organelles. There are two types of cells:

- Eukaryotic – cells that contain nucleus and other organelles
- Prokaryotic – do not have a nucleus and other organelles



Plant Cell



1

The importance of Cells

Cells are the basic unit of living things. It is essential to maintain an equilibrium in our body. There are certain organelles that help us maintain this. These organelles metabolize food into energy for repair, growth, and reproduction.

As the plant cell and the animal are joined/band together to form tissue, bones and vital organs to accomplish certain jobs, which are:

- brain function – sending signals to the brain
- grow new bones after an injury or build muscle after exercise

Life without Cells

Virus and infectious diseases can replicate only in a cell host. This affects our DNA and RNA taking over. We must maintain our immune system healthy in order to keep homeostasis steady.