![HSAPQ logo] High School Academic Pyramid Questions

1. In one poem by this author, the speaker experiences the "perfect silence" of the outdoors after walking out on the proofs and figures of the "learned astronomer." Another poem by this author describes the "filament, filament, filament" launched by "the noiseless patient spider." This author of "Out of the Cradle Endlessly Rocking" wrote a poem wherein the speaker sounds "a barbaric yawp over the roofs of the world," a poem beginning "I celebrate myself, and sing myself." For 10 points, name this author of *Song of Myself*, who collected all of those poems in *Leaves of Grass*.
ANSWER: Walter **Whitman**

026-09-1-13101

2. This city was the center for the work of Hans and Sophie Scholl during their time in the White Rose. One meeting in this city was interrupted by supporters of Erich Ludendorff in the Beer Hall Putsch, led by Adolf Hitler. A conference held in this city produced a namesake agreement that led Neville Chamberlain to believe "peace in our time" had been achieved. During one event in this city, operatives of Black September killed a group of people. For 10 points, name this German city whose 1972 Olympics included the murder of Israeli athletes.
ANSWER: **Munich** [or **München**]

023-09-1-13102

3. This man wrote a play in which James Joyce gets help writing Ulysses from a woman in love with Tristan Tzara, *Travesties*. This author of *The Coast of Utopia* also wrote about a murder mystery within a play in a work about theater critics named Birdboot and Moon called *The Real Inspector Hound*. Septimus Hodge falls in love with his genius 13-year-old student, Thomasina, in one play. Another of his plays opens with a long series of heads-up coin tosses and ends with the disappearance of the two title characters, who are drawn from Shakespeare's *Hamlet*. For 10 points, name this playwright of *Arcadia* and *Rosencrantz and Guildenstern Are Dead*.
ANSWER: Tom **Stoppard** [or Tomas **Straussler**]

032-09-1-13103

4. One way of measuring this is equivalent to the mass mixing ratio, while the volumetric measurement is not usually used. One simplified device for measuring it is the psychrometer, which consists of two thermometers and comparing the current conditions to those of saturated air at the same temperature yields the relative measure of this. That saturation point is known as the dew point and using both temperature and this measurement allows one to calculate the heat index. For 10 points, identify this measure of how much moisture is in the air.
ANSWER: **humidity** [or **relative humidity**]

001-09-1-13104

5. This river plunges through the Five Finger Rapids in its headwaters, where it is joined by the Teslin River after flowing from Atlin and Tagish Lakes. The Porcupine River is a tributary of this river, which flows into Lake Laberge. A namesake trail from Skagway to Dawson was used during the Klondike Gold Rush. It runs through Whitehorse and flows north of Fairbanks. For 10 points, name this river that runs through Alaska and a namesake Canadian territory.
ANSWER: **Yukon** River

036-09-1-13105

6. This author created shoemaker Ralph Spencer, who is actually safecracker Jimmy Valentine, in "A Retrieved Reformation." The title of one collection of his stories refers to the population of New York, *The Four Million*. In one of this author's stories, Bill Driscoll and Sam Howard end up giving 250 dollars to Ebenezer Dorset, whose son believes himself to be on a camping trip and styles himself "Red Chief." In his best known story, Jim and Della sell their watch and hair to buy each other gifts pertaining to their watch and hair. For 10 points, name this author of "The Gift of the Magi," known for his frequent twist endings.
ANSWER: **O. Henry** [or **W**illiam Sidney **Porter**; prompt on **Porter**]

7. Guillaume de Mauchaut wrote one of these compositions named for Notre Dame that was the first one of these composed. Ones by composers like Josquin used the cantus firmus *L'homme armé*. Most settings of this end with the statement "Grant us peace" in the "Agnus Dei," and they open with a "Kyrie." Palestrina wrote one named after Pope Marcellus. Bach composed one in B minor despite being a Lutheran. They also include settings of the "Gloria," "Sanctus," and the Nicene Creed, and ones for the dead are named "Requiems." For 10 points, name this weekly Catholic ritual, which is often set to music.
ANSWER: **Mass**es ordinary [or **missa**; or ordinary **mass**es]

8. One character in this novel contracts scarlet fever from the Hummel family's baby. Another character in this novel marries Mr. Brooke, and a third character inherits Plumfield and marries Professor Bhaer. This novel is named for the daughters of Marmee, the sisters Amy, Beth, Meg, and Jo Marsh. For 10 points, name this novel written by Louisa May Alcott.
ANSWER: **Little Women**

9. 2,4-DNP is an example of an uncoupler used by this organelle. The color of brown fat is due to the high concentration of this organelle, which is responsible for generating heat in that tissue. One can trace matrilineal descent through this organelle's DNA. Like the chloroplast, this double-membraned organelle is the subject of the endosymbiotic hypothesis. For 10 points, name this site of oxidative phosphorylation, the energy-producing organelle.
ANSWER: **mitochondria**

10. This opera's first act opens with the opening of the "Star-Spangled Banner." One character buys a 999 year lease on a home before meeting the consul Sharpless. In this opera, the title character sings "Un Bel di Vedremo." After being forced to give up her son Sorrow to Kate, the title character says farewell to her maid Suzuki and kills herself before Lieutenant Pinkerton can stop her. For 10 points name this Giacomo Puccini opera about Cio-Cio San's love of an American soldier in Japan.
ANSWER: *Madame Butterfly*

1. One function exhibiting the "mu" type of this technique that isn't also of the "primitive" type is the Ackermann function. The stack space used by this technique can be decreased by using the "tail" type of it. It is often used to implement the factorial function, solve the Towers of Hanoi problem, and calculate the Fibonacci sequence. For 10 points, name this programming technique, often contrasted with iteration, in which a function calls itself.

ANSWER: **recursion** [or **recursivity**; or **recursive** functions; accept word forms]

029-09-1-13111

BONUS. Pencil and paper may be useful. For a reaction carried out at 300 Kelvin, the change in enthalpy is negative -300 Joules and the change in entropy is 3 Joules per Kelvin. For 10 points each:

[10] Calculate the change in Gibbs free energy for this reaction.

ANSWER: **-1200** Joules [or **negative twelve hundred** joules or equivalents; do not accept "twelve hundred" or other positive equivalents]

[10] This is the term for reactions, such as this one, which will occur by themselves if given enough time to proceed, and are characterized by a negative change in Gibbs free energy.

ANSWER: **spontaneous** reactions

[10] In general, the Gibbs Free Energy is a metric of the thermodynamic potential of obtaining this from a reaction. This quantity is calculated by multiplying force and distance.

ANSWER: **work**

003-09-1-13201

2. One character of this play gets evicted from the Flamingo Hotel and fantasizes about Shep Huntleigh. In one scene of this play, a character angrily throws a radio out of the window and leaves two women to seek refuge with the upstairs neighbor Eunice. This play ends with Steve dealing a hand of poker, as one character who yells "Fire!" to avoid having sex with Mitch is led to an asylum while saying that she has "always depended on the kindness of strangers." For 10 points, name this play in which Stanley rapes his wife Stella's sister, Blanche Dubois (doo BWAH), a work by Tennessee Williams.

ANSWER: *A Streetcar Named Desire*

032-09-1-13112

BONUS. For 10 points each, name these art movements.

[10] Thomas Moran, Albert Bierstadt, and Thomas Cole were members of this nineteenth century American school of painters, which mainly created grand panoramas of nature.

ANSWER: **Hudson River** School

[10] This school focused on depicting the urban squalor of American life. Its members included Everett Shinn and John Sloan.

ANSWER: **Ashcan** School

[10] This early twentieth century art movement used non-natural, bright colors, and included Andre Derain and Henri Matisse. Its name is French for "wild beasts."

ANSWER: **Fauvism** [or the **Fauve**s]

004-09-1-13202

3. The current leader of this country was accused of tampering with election results after narrowly defeating former movie star Fernando Poe, Jr., in the 2004 election. The Communist Party in this country was made legal by the staunchly anti-communist Fidel Ramos. This country's first civilian American governor was William Howard Taft. This country's independence movement included figures such as José Rizal and Emilio Aguinaldo, who fought against the United States and Spain. For 10 points, name this Asian island country with a capital at Manila.
ANSWER: Republic of the **Philippines** [or Republika ng **Pilipinas**]

BONUS. The title character becomes frustrated with her Paris life and kills her husband Camille in one of this man's early novels, *Thérèse Raquin*. For 10 points each:
[10] What French author is better known for defending Alfred Dreyfus in an open letter to Felix Faure, "J'Accuse!"?
ANSWER: Emile Francois **Zola**
[10] Zola's best known novel is this work about Étienne Lantier, who leads a coal miners' strike in a town in Norther France.
ANSWER: ***Germinal**
[10] Zola's novel *Nana* is about a singer of this genre. Another singer in this medium, Christine, is loved by the deformed Erik in a Gaston Leroux novel about the "phantom" of it.
ANSWER: **opera**

4. The reaction used to synthesize this compound works best with an osmium catalyst, but iron is used because it is more cost-effective. This material is oxidized in a reaction that uses a platinum-rhodium metal gauze. That reaction, the Ostwald Process, is used to turn this compound into nitric acid. The industrial process used to create this compound uses high pressure and heat to break the triple bond of its primary ingredient, nitrogen gas. For 10 points, name this compound that is formed via the Haber-Bosch process, a chemical with formula NH_3.
ANSWER: **ammonia** [or **hydrogen nitride**; or **Spirit of Hartshorn**; or **Nitro-Sil**; or **Vaporole**; accept **NH_3** before it is read]

BONUS. This suite was originally written for piano, and it ends with the movement "The Great Gate of Kiev." For 10 points each:
[10] Name this that also includes the movements "Market at Limoges" and "The Old Castle." It has a "Promenade" theme to represent walking to differeng Viktor Hartman paintings.
ANSWER: *Pictures at an Exhibition* [or *Pictures from an Exhibition*; or *Kartinki s vystavki*]
[10] *Pictures at an Exhibition* is a work of this Russian composer, who also wrote the tone poem *Night on Bald Mountain*.
ANSWER: Modest Petrovich **Mussorgsky**
[10] *Pictures at an Exhibition* is most often performed in an orchestration by this composer, who himself composed *Pavane for a Dead Princess*, *Gaspard de la Nuit* (GAS-pard day lah NOO-ee), and the repetitive *Bolero*.
ANSWER: Joseph-Maurice **Ravel**

5. This region's Khitans created the Liao Empire only to be overthrown by the Jin Dynasty of the Jurchens during the 12th Century. The people of this region allied with Wu Sangui and were led by Nurhaci. After the assassination of its warlord Zhang Zoulin in 1928, a Japanese invasion led to a puppet state here ruled by Pu-Yi. In 1644, the people from this region came into power after the Ming Dynasty ended, and established the Qing dynasty. For 10 points, name this northeastern region of China.
ANSWER: **Manchuria**

040-09-1-13115

BONUS. Name these recent American authors, for 10 points each.
[10] This author of the play *The Engineer of Moonlight* may be better known for his novels, such as one about Hitler Studies professor Jack Gladney, *White Noise*.
ANSWER: Don **DeLillo**
[10] The 2009 novel *Inherent Vice* is the latest work of this recluse, who described The White Visitation's pursuit of Tyrone Slothrop in *Gravity's Rainbow* and wrote *The Crying of Lot 49.*
ANSWER: Thomas Ruggles **Pynchon** Jr.
[10] This author died in January 2009, echoing the fate of his recurring character Rabbit Angstrom. His other novels include *The Witches of Eastwick* and *Terrorist.*
ANSWER: John Hoyer **Updike**

019-09-1-13205

6. This artist had a falling-out over the use of diagonal lines with Theo van Doesburg, the founder of the movement with which he is associated. This artist named that style "neoplasticism," and used a gigantic red square and some smaller rectangles separated by horizontal lines in his *Composition in Red, Blue and Yellow*. The best known work of this artist was inspired by the city grid of New York and depicts motion reminiscent of a kind of dance music. For 10 points, name this Dutch artist, a member of the De Stijl (Duh Style) movement and painter of *Broadway Boogie Woogie*,
ANSWER: Pieter Cornelis "Piet" **Mondrian**

024-09-1-13116

BONUS. This event began with a coup overthrowing Isabel Peron, and those convicted of their part in it were pardoned by Carlos Menem in a move to placate the military. For 10 points each:
[10] Name this event from 1976 to 1983, in which over 10,000 suspected leftists, subversives, and innocent civilians were "disappeared."
ANSWER: **Dirty War**
[10] The Dirty War took place in this country, which regressed to political instability after the death of dictator Juan Peron and has seen periodic rioting in its capital of Buenos Aires.
ANSWER: **Argentina**
[10] The Dirty War regime made an international relations error when they invaded these islands in the South Atlantic, only to see Great Britain retake them within three months.
ANSWER: **Falkland Islands** [or **Falklands**; or **Islas Malvinas**; accept **Falkland Islands War**]

003-09-1-13206

7. Fighting during this battle included a bombardment of the Miller cornfield as well as fighting for control of the sunken road known as Bloody Lane. The division of one side's forces before this battle was discovered by B.W. Mitchell in a piece of paper wrapped around three cigars, known as Special Order 191. This battle gave Abraham Lincoln the proper mood to announce his preliminary Emancipation Proclamation. For 10 points, name this battle fought in Maryland between the forces of McClellan and Lee, the bloodiest day of fighting during the Civil War.
ANSWER: Battle of **Antietam** [or Battle of **Sharpsburg**]

023-09-1-13117

BONUS. Name these members of Greek mythology's dysfunctional House of Atreus, for 10 points each.

[10] This man was the son of the incestuous Thyestes (thigh-ESS-teez) and Pelopia. His affair with Clytemnestra had murderous consequences.

ANSWER: **Aegisthus**

[10] Aegisthus and Clytemenstra (cly-tem-NESS-truh) killed this man, Clytemnestra's husband, after he returned from the Trojan War. Along with his brother Menelaus (men-uh-LAY-us), he was a stepbrother of Aegisthus.

ANSWER: **Agamemnon**

[10] This man avenged his father Agamemnon's death at the urging of his sister Electra, but was then driven insane by the Furies for the act.

ANSWER: **Orestes**

003-09-1-13207

8. WRITE MORE QUESTIONS, Particularly a Literature-American Tossup

00--20-13118

BONUS. This object consisted of a series of ouvrages, each approximately nine miles apart. For 10 points each:

[10] Name this series of fortifications, which completely failed in its intended purpose of keeping the German army out of France.

ANSWER: **Maginot** Line

[10] The Maginot Line replaced a continuous line of trenches envisioned by this victor at the Battle of Verdun, who later led the Vichy government.

ANSWER: Henri Philippe **Petain**

[10] France had built the similar Alpine Line to deal with the forces of this neighboring country, which lost its military governor in Libya and switched sides during the course of World War II.

ANSWER: **Italy** [or **Italian** Republic; or Repubblica **Italiana**]

003-09-1-13208

9. This country was the location of the Don Pacifico affair, which occurred during the rule of a German put on the throne by the Convention of London, King Otto. During this country's fight for independence, around twenty thousand people were killed in a massacre on the island of Chios and Lord Byron died fighting here. Earlier groups in this modern country fought the Battles of Salamis and Thermopylae against invading Persians. For 10 points, name this country that, in ancient times, was known for city-states like Corinth, Sparta, and Athens.

ANSWER: **Greece** [or **Hellenic** Republic; or **Ellinikí** Dhimokratía]

023-09-1-13119

BONUS. Their period is approximately proportional to the square root of their length over the gravitational acceleration. For 10 points each:

[10] Name these devices that consist of a mass supported by a string or other pivoting connector.

ANSWER: **pendulum**

[10] Pendulum motion is similar to this type of motion demonstrated by a mass on a spring.

ANSWER: simple **harmonic** motion [or **harmonic oscillator**; do not accept "quantum harmonic motion"; do not accept "quantum harmonic oscillator"]

[10] The force which causes a body to experience simple harmonic motion is often given by this law, which relates the force of a spring to its displacement from equilibrium and a spring constant.

ANSWER: **Hooke**\'s Law

001-09-1-13209

10. One type of this disease is caused by a mutation in the RB gene and a loss of heterozygosity, meaning no functional Rb protein is produced. Another type was found by Peyton Rous to be caused by a retrovirus, and this disease often begins with a gain-of-function mutation in a proto-oncogene. Later stages of this type of disease may involve the metastasis of a malignant tumor. For 10 points, name this unchecked proliferation of mutated cells, forms of which include leukemia and those affecting the lung and skin.
ANSWER: **cancer**

BONUS. This thinker proposed that the title figure of his *Moses and Monotheism* was a follower of Akhenaten. For 10 points each:
[10] Name this figure who discussed "The Horror of Incest" in Aboriginal culture in *Totem and Taboo* and the result of punitive laws in *Civilization and Its Discontents*.
ANSWER: Sigmund Schlomo **Freud**
[10] Freud's magnum opus "interprets" these occurrences, a named example of which is "Irma's Injection," and which might represent sex if they involve ladders and inclines.
ANSWER: **dream**s [accept word forms]
[10] In Freud's threefold model of the psychic apparatus groups, this portion represents the basest desires and impulses, and is at odds with the ego and superego.
ANSWER: **id**

1. [10] Joe Theismann, Doug Williams, and Mark Rypien are the three men who have won the Super Bowl while playing for what position and team?
ANSWER: **quarterback** for the Washington **Redskins** [or **quarterback** for **Washington**; accept obvious equivalents; prompt if only one of the correct answers is given]

2. [10] This is a 30-second calculation question. A company normally sells widgets at 75 cents each, but if you buy more than 25, you get a 10% discount. What would be the total cost of buying 30 widgets?
ANSWER: $**20.25**

3. [10] "Masculine," "feminine," "complete," "incomplete," and "slant" are all types of what literary device?
ANSWER: **rhyme** [or **rhyming** or other word forms]

4. [10] This phenomenon disappears above the Curie point. Identify this kind of magnetism that can occur in nickel or cobalt, but is named for its presence in iron.
ANSWER: **ferromagnetism** [do not accept "antiferromagnetism"]

5. [10] This is a 10-second calculation question. When temperature is held constant, then P times V is also constant. If P = 15 pascals when V = 20 liters, find P when V = 30 liters.
ANSWER: **10** pascals

6. [10] Citrine, silica glass, and amethyst are all types of what rock, principally made of silicon dioxide, that also has "smoky" and "rose" versions?
ANSWER: **quartz**

7. [10] Angola and the island of Macau are some of the locations where this is a majority language. Identify this originally European language, whose largest concentration of speakers is found in Brazil.
ANSWER: **Portuguese** [or **Português**]

8. [10] In 1968, he stated that, "In the future, everyone will be world-famous for 15 minutes." Later that year, Valerie Solanas claimed her 15 minutes by shooting him. Name this American "pop artist," who painted Marilyn Monroe and Campbell's soup cans.
ANSWER: Andy **Warhol** [or Andrew **Warhola**]

9. [10] Conservative leader David Cameron and Liberal Democrat Nick Clegg are poised to challenge the fading popularity of what current Prime Minister of the United Kingdom, who is legally obligated to call for an election before June 2010?
ANSWER: James Gordon **Brown**

10. [10] This is a 30-second calculation question. If theta is an angle in the second quadrant with sine theta equal to 3/5, what is the tangent of theta?
ANSWER: **-3/4**

019-09-1-13401

1. [10] Serena's incorporation into Blair's social circle is the basic plot of what CW show, that stars Blake Lively and Leighton Meester and adapts an eponymous series of books by Cecily von Ziegesar?
ANSWER: *Gossip Girl*

2. [10] This is a 20-second calculation question. If 5a - 3b = 8c, and a = 9 and c = 2, find b.
ANSWER: **29/3** [or **9 2/3**]

3. [10] Though scholars more often praise his *Blood Meridian*, what contemporary author achieved more popular success with *The Road*, *All the Pretty Horses*, and *No Country For Old Men*?
ANSWER: Cormac **McCarthy** [or Charles **McCarthy**]

4. [10] Phytol (FYE-tawl) side chains branching off a porphyrin (POUR-fuh-rin) ring around a magnesium atom comprise what molecule that absorbs blue and red light in photosynthesis, reflecting green light and thus giving plants their color?
ANSWER: **chlorophyll** [do not accept "chloroplast"]

5. [10] This is a 20-second calculation question. To the nearest penny, how much would you pay for 3 gallons of gasoline at $2.429 (two dollars and 42.9 cents) per gallon?
ANSWER: $**7.29**

6. [10] A ninth-grade science teacher testified that a fourteen-year-old Philo Farnsworth had discovered the basic principle of this technology. Identify this invention, which Farnsworth successfully won a patent on in a 1939 lawsuit against RCA and Vladimir Zworykin.
ANSWER: **television**

7. [10] Djibouti, Eritrea, Ethiopia, and Somalia comprise what piracy-stricken region with a musical-sounding name?
ANSWER: the **horn of Africa**

8. [10] The Pahari people of Nepal and the classical culture of Tibet were some of the few groups that engaged in what specific form of polygamy, in which a woman is permitted to have multiple husbands?
ANSWER: **polyandry** [do not accept "polygyny"]

9. [10] In September 2009, a march in what country accused a neighboring country's president, Hugo Chavez, of smuggling weapons across the border to this country's militant FARC movement?
ANSWER: Republic of **Colombia** [or Republica de **Colombia**]

10. [10] This is a 10-second calculation question. You draw two cards at random from a standard poker deck of 52 cards. If the first card is a king, what is the probability that the second card is a queen?
ANSWER: **4/51**

019-09-1-13401

1. In novel by this man, a meal on Whitsuntide is arranged to lure away La Ramée and the Comte de Rochefort is killed by a man he befriended and dueled. This author of *Twenty Years After* and *The Vicomte of Bragelonne* wrote about the Man in the Iron Mask in a sequel to a book about Milady de Winter's enmity toward D'Artagnan, Athos, Porthos, and Aramis, and about Mercédès's fiancée, who is condemned to life imprisonment in the title island by Villefort. For 10 points, name this author of *The Three Musketeers* and *The Count of Monte Cristo*.
ANSWER: Alexandre **Dumas**, père [or **Dumas** Davy de la Pailleterie]

020-09-1-13122

2. This process is used on beams of neutrons to determine the surface structure of thin films. Its diffuse form is modeled well by a Lambertian model, in which intensity is directly proportional to the emission angle and so perceived radiance is constant. For a given polarization, this phenomenon is minimized at Brewster's angle. Above the critical angle, a "total internal" variety of this phenomenon occurs. For 10 points, name this phenomenon in which a wavefront changes direction at an interface between two media so that it returns to the first medium, which takes place with mirrors.
ANSWER: **reflection**

022-09-1-13123

3. This man delivered a famed 1820 speech commemorating the landing of the *Mayflower*. This politician argued for his alma mater in the case *Dartmouth v. Woodward*. This man argued against nullification in his 1830 debate with Robert Hayne. As Secretary of State, this man was the only cabinet member to carry over from William Henry Harrison to John Tyler's administration. For 10 points, name this famous orator and politician, who negotiated a treaty that settled the Maine-Canada boundary with Baron Ashburton.
ANSWER: Daniel **Webster**

030-09-1-13124

4. One author from this country wrote about Jesuit missionary Sebastian Rodrigues in his novel *Silence*. A woodcutter and bandit offer conflicting accounts of a murder in "In a Grove", whose author names the highest literary prize of this nation. A Nobel laureate from this country wrote *A Personal Matter* and *The Silent Cry*. The author of *Confessions of a Mask* and the *Sea of Fertility* tetralogy is from this country, as is the eleventh century court lady who wrote *The Tale of Genji*. For 10 points, name this homeland of Yukio Mishima and Lady Murasaki.
ANSWER: **Japan** [or **Nippon**-koku; or **Nihon**-koku]

012-09-1-13125

5. Operation Cyclone was designed to weaken this country. This country was administrated partly by the GOSPLAN. During World War II, this country launched Operation Uranus and won the Battle of Kursk. This country invaded one of its neighbors after the Saur Revolution, though it was defeated by the mujahideen. After a period of perestroika and glasnost, this country collapsed in 1991 and was replaced by the CIS. For 10 points, name this rival of the United States and NATO during the Cold War.
ANSWER: **Soviet Union** [or **Sovetsky Soyuz**; or **Union of Soviet Socialist Republics**; or **USSR**; or **CCCP**; or **Soyuz Sovetskikh Sotsialisticheskikh Respublik**]

021-09-1-13126

6. One of the first incidents related in this novel is a card game played by forming latrine boxes into a table. As Kemmerich is dying from an infected leg wound in this novel, he gives his boots to Müller. The central characters of this novel are recruited by the teacher Kantorek and trained by the harsh Corporal Himmelstoss. The title phrase is the only content of the official army report on the day that the protagonist of this novel, Paul Bäumer, is killed. For 10 points, name this novel about the average German soldier in World War I, written by Erich Maria Remarque.
ANSWER: *All Quiet On The Western Front* [or *Im Westen nichts Neues*]

7. This god's brother Anteros was worshipped in Athens following the deaths of Meles and Timagoras. In one creation myth, his coupling with Chaos produced the birds. By one lover, he gave birth to the goddess Voluptas or Hedone. This god banished one of his lovers when her curiosity caused her to spill lamp oil on him. He is the lover of Psyche and daughter of Aphrodite. For 10 points, name this classical god of love, often depicted flying with angelic wings and wielding a magic bow and arrow.
ANSWER: **Eros** [or **Cupid**]

8. Edward Chace Tolman formulated the "purposive" branch of this school. Another member of this school wrote *Animal Intelligence* and researched how cats escaped from puzzle boxes. In addition to Edward Thorndike, another member of this school conducted the Little Albert experiment and claimed to be able to train an infant to "become any type of specialist." For 10 points, name this school of psychology associated with John B. Watson and B.F. Skinner, which attempts to study the actions of animals and humans.
ANSWER: **behaviorism**

9. By Fubini's theorem, multiple instances of this operator can be performed in any order, and performing it on a product of functions can be done "by parts." Using the disk or shell methods, one can use this operator to find the volume of a solid of revolution. First defined rigorously by Bernhard Riemann, this operator can be described graphically as finding the area under the graph of a function. For 10 points, name this function, which by the Fundamental Theorem of Calculus is the inverse function of differentiation.
ANSWER: **integration** [or **integral**]

10. A book about a journey on this route was the first bestseller for popular historian Francis Parkman. Marcus Whitman led the "great migration" along this route. Landmarks on this route included Fort Bridger, Fort Hall, and Soda Springs. Twelve thousand people used this route to settle in the Columbia River Valley. This route started at Independence, Missouri and moved westward through Kansas, Nebraska, and Wyoming, where it shared stretches with the Mormon Trail. For 10 points, identify this settler route to a namesake Western U.S. territory.
ANSWER: **Oregon Trail**

High School Academic Pyramid Questions

1. If an alternate loop structure is present, these entities can terminate early in a process known as attenuation. The mechanism of their function was discovered by Jacob and Monod. Translational repressors of these entities contrast with their transcriptional repressors, which bind to the operator site. They also have promoter sites, where RNA polymerase binds. In *E. coli*, one of them facilitates the transport and production of lactose. For 10 points, name these sequences of prokaryotic DNA that regulate expression of related genes, including the trp (trip) and lac types.
ANSWER: **operon**s

026-09-1-13132

2. This composer's first symphony was originally for organ. Eugene Goossens commissioned a brass-and-percussion piece by this composer that he would later incorporate into the finale of his *Third Symphony*. One of this man's ballets contains the "Hoe-Down" movement. He composed a ballet choreographed by Martha Graham that incorporates the Shaker hymn "Simple Gifts." For 10 points, name this American composer of *Rodeo*, *Fanfare for the Common Man*, and *Appalachian Spring*.
ANSWER: Aaron **Copland**

026-09-1-13133

3. Barriers to entry are one way that existing firms can have the "incumbent" form of this, as compared to new firms in a market. The ability to produce a good more efficiently in a national economy is its "absolute" form. Two countries which produce more of two goods by respectively specializing in one and the other are benefiting from another form of this, which was originally explained in terms of British cloth and Portuguese wine by David Ricardo. For 10 points, give this economic term that appears in justifications of international trade in its "comparative" form.
ANSWER: **advantage**

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