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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 2****First Period, Fifteen Tossups** |

1. The protagonist of this novel hews a head from a corpse so he can fit it into the household furnace. The Communist lawyer Boris Max unsuccessfully defends the main character of this novel. This novel’s protagonist accidentally smothers Mary Dalton, whose white family he works for as a chauffeur. For 10 points, name this novel about Bigger Thomas written by Richard Wright.

ANSWER: ***Native******Son***

2. Giovanni Donato’s depiction of the Crucifixion lies across from this painting in the Santa Maria delle Grazie. In this painting, a cup holding salt is tipped over by a man who clutches a bag in his right hand. The apostle John is shown with long hair in this painting, to the left of its central figure, whose palms are open. For 10 points, name this Leonardo da Vinci painting that depicts Christ’s final meal.

ANSWER: *The* ***Last******Supper*** [or *Il* ***Cenacolo***; or *L’****Ultima* *Cena***]

3. An antagonist of this compound is prolactin. This compound's synthesis involves the hydroxylation of tyrosine, and it acts on the mesolimbic and mesocortical pathways in the central nervous system. This neurotransmitter is primarily produced in the substantia nigra, and it is a precursor to norepinephrine. A deficiency in this neurotransmitter's action is associated with Parkinson's disease. For 10 points, name this neurotransmitter associated with reward-seeking behavior, and whose precursor is L-dopa.

ANSWER: **dopamine**

4. This state was the site of the Reconstruction-era Colfax Massacre. During the Civil War, this state's largest city was occupied by the widely-hated Benjamin Butler. This state's segregation of train cars was upheld in Plessy v. Ferguson. In a battle in this state, the pirate Jean Lafitte assisted Andrew Jackson in a decisive American victory during the War of 1812. For 10 points, name this southeastern state home to New Orleans.

ANSWER: **Louisiana**

5. The main decay mode of neutral pions is into two of these particles. These particles collide with electrons to produce Compton scattering. These gauge bosons can be bombarded at a sheet of metal, causing the emissions of electrons, in an effect explained by Einstein. For 10 points, name these particles which can exhibit wave properties, and which are the quanta of light.

ANSWER: **photon**s

6. This author speculated about the fate of Shakespeare’s hypothetical sister Judith in a landmark feminist essay entitled A Room of One’s Own. She wrote about the suicide of Septimus Smith in a novel in which the title character Clarissa hosts a party. She created the Ramsay family in a novel that ends with their visit to the title structure. For 10 points, name this modernist who wrote Mrs. Dalloway and To the Lighthouse.

ANSWER: Virginia **Woolf**

7. This man helped his future wife, Katharina von Bora, escape from a nunnery in a barrell. This person condemned Thomas Munzer's peasant army as a "Murderous and Thieving Horde." This man was kidnapped and taken to Wartburg castle on orders of Frederick III of Saxony. He burned the papal bull Exsurge Domine and was questioned by Johann Eck at the Diet of Worms. For 10 points, name this man who posted his 95 Theses at the Wittenberg cathedral, thus beginning the Protestant reformation.

ANSWER: Martin **Luther**

8. After discovering a fact about this number, Hippasus was allegedly murdered by followers of Pythagoras. If a sphere is circumscribed about an octahedron with sides of length 1, the sphere has this diameter. This value is the length of the diagonal of a unit square, and the hypotenuse of a right triangle with legs of length 1. For 10 points, identify this irrational number, equal to about 1.414.

ANSWER: the square **root** of **2**

9. A park in this state employs vehicles called Red Jammers, which cross the narrow Going-to-the-Sun Road. The Jefferson, Madison and Gallatin Rivers merge to form the Missouri in this state, whose Flathead Lake is a remnant of the prehistoric Lake Missoula. This state’s border with the province of Alberta is the site of Glacier National Park. For 10 points, name this state whose cities include Billings and Helena.

ANSWER: **Montana**

10. At the 2009 U.S. Open semifinals, this player retrieved a lob from Novak Djokovic with an in-between-the-legs tweener, which brought him match point. He defeated Pete Sampras in 2001 in a five-set thriller in the fourth round of Wimbledon, and won his first Grand Slam against Mark Philippoussis in 2003. This player has a long rivalry with another man nicknamed the “King of Clay,” Rafael Nadal. For 10 points, name this Swiss tennis player, a 17-time Grand Slam champion.
ANSWER: Roger **Federer**

11. This male title character is entertained by the “Dance of the Blessed Spirits” in the first “reform opera” by Christoph Gluck. Another opera about this figure was subtitled a “fable in music” by Claudio Monteverdi. He was portrayed by Jacques Offenbach in an operetta featuring the Infernal Galop, or “can-can,” as “in the underworld.” For 10 points, name this common operatic subject, a mythological musician who attempts to bring his dead wife Eurydice back from Hades.

ANSWER: **Orpheus** [or **Orfeo**; or **Orphée**]

12. During Operation Tidal Wave, the U.S. Air Force bombed oil refineries in this country's city of Ploiești. This country's ruler during World War II, Ion Antonescu, was forced to strip power from the Iron Guard. A revolution in this country started in Timișoara and toppled the dictator Nicolae Ceausescu. For 10 points, name this modern-day location of Transylvania, an eastern European country whose leaders rule from Bucharest.

ANSWER: **Romania** [or **Rumania**]

13. In an essay, this man theorized a conflict between a person's instincts for death and the drive for pleasure. The phallic and latency stages are part of his theory of psychosexual development, and he distinguished between the "manifest" and "latent" content of a form of "wish fulfillment." This psychologist theorized the Oedipus complex, and he divided the human psyche into the id, ego, and the superego. For 10 points, name this Austrian founder of psychoanalysis.

ANSWER: Sigmund **Freud**

14. A mythical figure from this country had to enter a cripple's corpse during a quest for immortality, leading him to be depicted with an iron crutch. A snake-woman from this country's mythology repaired the wall that holds up heaven. Mythological figures from this country include the Eight Immortals and Three Pure Ones, who include a celestial ruler known as the Jade Emperor. Its rulers claimed a divine right from tian known as the Mandate of Heaven. For 10 points, name this Asian country, the birthplace of Taoism.

ANSWER: **China**

15. In a book by this philosopher, he suggests that friendships based on the good are the most perfect. This philosopher frequently collaborated with his student Eudemus of Rhodes. This man argued that virtues of character lie between two extremes in his discussion of the “doctrine of the mean.” In a book named for his son, this man argued that eudaimonia is the highest goal of human life. For 10 points, name this author of *Nicomachean Ethics* and tutor of Alexander the Great.

ANSWER: **Aristotle**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 2****Directed Round** |

1A. Diego Rivera's mural *Man at the Crossroads* stirred up controversy for depicting what Russian leader?

ANSWER: Vladimir **Lenin** [or Vladimir Ilyich **Lenin**; or Vladimir Ilyich **Ulyanov**]

1B. Name the people who left France after Louis XIV issued the Edict of Fontainebleau, which revoked many of the rights Henry IV had given them in the Edict of Nantes.

ANSWER: **Huguenot**s [or French **Protestant**s]

2A. What Colorado city was the site of a mass shooting that killed twelve during a midnight screening of *The Dark Knight Rises* in July 2012?

ANSWER: **Aurora**, Colorado

2B. What hormone, produced in the adrenal glands, is responsible for a “fight or flight” mechanism in humans and is the namesake of “pens” used by those with allergies?

ANSWER: **epinephrine** [or **adrenaline**]

3A. This is a 20-second calculation question. What is the minimum value of the function "f of x equals 3 plus 2 times the sine of x?"

ANSWER: **1**

3B. This is a 20-second calculation question. When rolling two standard six-sided dice, what is the probability that the sum of the numbers shown on the top faces of the dice is exactly 3?

ANSWER: **1/18** [or **2/36**]

4A. The verb in the Latin phrase "Gaudeamus igitur" is in what non-indicative grammatical mood, which can be used to express wishes?

ANSWER: **subjunctive**

4B. What Midwestern city was described as a "Stacker of Wheat" with "big shoulders" in a poem by Carl Sandburg?

ANSWER: "**Chicago**"

5A. What Athenian statesman was succeeded by the tyrant Peisistratus and repealed much of Draco's harsh law code?

ANSWER: **Solon**

5B. What name is given to the line that all points of a parabola are the same distance from as they are from the focus?

ANSWER: **directrix**

6A. Name the mythical sculptor from Cyprus whose offerings to Aphrodite made his statue become alive. ANSWER: **Pygmalion**

6B. What city gets water from the Lake Biwa Canal and is the namesake of a 1997 “protocol” concerning the emission of greenhouse gases.

ANSWER: **Kyoto**

7A. In what Nadine Gordimer novel does the title black servant aid the Smales family as they free Johannesburg?

ANSWER: ***July’s People***

7B. Along with solicitor, what word in Britain refers to an attorney, in this case, one who is qualified to argue cases in courts?

ANSWER: **barrister**

8A. This is a 30-second calculation question. What are all of the solutions to the equation "x cubed minus 2 x squared minus 9 x plus 18 equals 0?"

ANSWER: x = **3**, x = **-3**, and x = **2**

8B. This is a 30-second calculation question. If the three angles of a triangle are represented as x + 30, 3x, and 4x - 10, then in degrees, what is the measure of the largest angle?

ANSWER: **70** degrees

9A. What man advocated a policy of détente while serving as Secretary of State under Nixon and Ford?

ANSWER: Henry **Kissinger**

9B. What Daphne du Maurier novel, which opens with the line "Last night I dreamt I went to Manderley again," features the cruel housekeeper Mrs. Danvers?

ANSWER: ***Rebecca***

10A. What college football team did Mike Evans and Johnny Manziel play for in the 2013 season?

ANSWER: **Texas A&M** University [or **TAMU**; prompt on **Aggies**]

10B. The Large Hadron Collider managed to confirm the existence of what elementary particle referred to as the "God particle"?
ANSWER: **Higgs boson**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 2****Third Period, Fifteen Tossups** |

1. This type of rock is classified according to its content of four minerals in the QAPF diagram.
Examples of this rock with high iron and magnesium content are called mafic, while those with more silicon are called felsic. Basalt floods of this type of rock form after large eruptions. This type of rock includes granite, and forms from cooled magma. For 10 points, name this type of rock that can be intrusive or extrusive, contrasted with sedimentary and metamorphic rock.
ANSWER: **igneous** rock

2. Shortly before this man’s death, his country was forced to surrender the territory of Aksai Chin to the People’s Republic of China. This leader ordered the annexation of Goa and granted asylum to the 14th Dalai Lama. He declared that “the light has gone out of our lives” upon hearing of Mahatma Gandhi’s assasination, and this leader delivered the “Tryst with Destiny” speech upon his nation’s independence. For 10 points, name this first Prime Minister of India.

ANSWER: Jawaharlal **Nehru**

3. In 2010, this politician tearfully said that he had spent his "whole life chasing the American Dream" during an emotional victory speech. On June 25, 2014, this man said he would ask the Bipartisan Legal Advisory Group to engage in what Democrats dismissed as a "stunt." That action spearheaded by this man was the filing of a lawsuit against President Barack Obama. For 10 points, name this Republican who has been Speaker of the House since 2011.

ANSWER: John **Boehner**

4. This phenomenon drives spectral broadening when photons are emitted from particles in thermal motion. An experiment by Ives and Stilwell showed that time dilation drives the transverse form of this effect. Redshift arises from this effect taking place for an emitter moving away from an observer. For 10 points, name this effect which causes the perceived pitch of a siren to decrease for a passing ambulance.

ANSWER: **Doppler** effect

5. The protagonist of this novel drinks milk laced with drugs at the Korova Milk Bar with his fellow “droogs” to prepare for some “ultraviolence.” The narrator of this novel is subjected to the Ludovico Treatment, which incidentally makes him react with nausea to the music of Beethoven. For 10 points, name this dystopian novel about the young thug Alex written by Anthony Burgess.

ANSWER: *A* ***Clockwork******Orange***

6. Athena decided to not bestow this gift to Tydeus after he ate the brains of Melanippus. Beings possessing this trait typically had ichor flowing through their veins. Unlike her sisters Stheno and Euryale, the Gorgon Medusa did not have this trait. Although Eos persuaded Zeus to grant this ability to her lover, Tithonus turned into a cicada because she forgot to ask for eternal youth. For 10 points, identify this trait possessed by the gods, who could not die.

ANSWER: **immortality** [or **eternal** **life**; or obvious equivalents; do not accept or prompt on "eternal youth"]

7. This president attempted to avoid controversy by letting a hearing-impaired Mississippi senator work with a lawyer in the Stennis Compromise. After his presidency, he was interviewed on television by David Frost. This man fired Archibald Cox as part of the Saturday Night Massacre. He was pardoned by his successor, Gerald Ford. For 10 points, name this American president who resigned after Watergate.

ANSWER: Richard Milhous **Nixon**

8. When heat is extracted from a reservoir, this quantity increases by the heat, divided by the temperature of the reservoir; therefore, this quantity has the same dimension as heat capacity, Joules per Kelvin. This quantity multiplies temperature in the equation for Gibbs free energy. In any real process, this quantity for the entire universe must increase, according to the Second Law. For 10 points, name this quantity symbolized S, a theoretical measure of "disorder."

ANSWER: **entropy** [or **S** until it is read]

9. In one of this man’s plays, a stray dog reveals its true form after following a man and his servant Wagner. This author inspired a wave of suicides after writing an epistolary novel whose protagonist shoots himself because of his unrequited love for Lotte. In one of this man’s plays, the title scholar makes a deal with Mephistopheles in exchange for his soul. For 10 points, name this German author of The Sorrows of Young Werther and Faust.

ANSWER: Johann Wolfgang von **Goethe**

10. This composer’s aria "Ombra mai fu" from his opera Serse is often called his “Largo.” This composer’s anthem "Zadok the Priest" is sung at British coronations. This composer’s oratorio Solomon includes the "Arrival of the Queen of Sheba." Sections such as "Ev’ry valley shall be exalted" and "For unto us a child is born" are included in his oratorio about Jesus. 10 points, name this German-born composer whose oratorio Messiah includes the "Hallelujah" chorus.

ANSWER: George Friedrich **Handel**

11. This country names an ancient kingdom that consolidated the states of Commagene and Sophene. The Artaxiad Tigranes the Great led a kingdom named for this modern-day country, which fought with Azerbaijan over Nagorno-Karabakh. Another nation's Article 301 has been used to prosecute those who comment about a crime inflicted on this country's people in 1915. This country shares the Ararat plain with Turkey. For 10 points, name this country whose people suffered a Turkish-inflicted genocide and whose capital is Yerevan.

ANSWER: **Armenia**

12. A character on this show formerly had a career as a Canadian pop star with the last name “Sparkles.” This show’s final season introduced cast member Cristin Milioti as Tracy. Other characters on this show include lawyer Marshall Eriksen and the womanizer Barney Stinson, who was played by Neil Patrick Harris. For 10 points, name this CBS comedy titled after Ted Mosby’s search for his wife.

ANSWER: ***How I Met Your Mother***

13. A high concentration of Chinese people live in this city’s area of Binondo, which is near a financial district named Divisoria. This Asian capital city is cut through by the Pasig River, with the presidential Malacanang Palace lying on its banks. Its metropolitan area includes the cities of Makati and Quezon City. It is found in the southern part of the island of Luzon. For 10 points, name this capital of the Philippines.

ANSWER: **Manila**

14. This biological agent's PB1 gene encodes for an apoptosis-inducing protein. Treatments against this biological agent include Zanamivir and Rimantadine. This agent binds to sialic acid in epithelial cells, and its classifications hinge upon the glycoproteins hemagglutinin and neuraminidase. Specific strains of this agent include H5N1 and H1N1, which are respectively known as its "bird" and "swine" varities. For 10 points, identify this specific type of virus for which children often receive fall vaccinations.

ANSWER: **influenza** virus [accept **flu** virus]

15. The protagonist of this novel asks, “Where are the Snowdens of yesteryear?” Whenever the protagonist approaches completion of the requisite number of missions, the number is arbitrarily raised by Colonel Cathcart. Characters in this novel include Milo Minderbinder, Major Major Major Major, and Captain Yossarian. For 10 points, name this comic novel about World War II pilots written by Joseph Heller.

ANSWER: ***Catch-22***

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl****Regular Season 2014****Round 2****Tiebreaker/replacement questions** |

1. During a siege in this region, Commius unsuccessfully tried to attack the contravallation walls built by the besiegers. A leader of an alliance in this region won the battle of Gergovia. After being captured at the Siege of Alesia, that man from this region, Vercingetorix, was taken to Rome and strangled. This region is said to be "divided into three parts" in the first sentence of a book by its conqueror, Julius Caesar. For 10 points, name this region of the Roman empire, the equivalent of modern-day France.
ANSWER: **Gaul**

2. This European country has four official languages, the least spoken of which is Romansh. A city in this country serves as the headquarters for both the World Health Organization and the organization that built the Large Hadron Collider, CERN. This country, which is divided into cantons such as Jura and Lucerne, remained neutral during the World Wars. For 10 points, name this country in the Alps whose cities include Bern and Geneva.

ANSWER: **Switzerland** [or **Swiss** **Confederation**]

3. This man told Robert Hooke that he could see further "by standing on the shoulders of giants." He wrote a book called *Method of Fluxions* which described a method he developed while at Woolsthorpe Manor during the Great Plague of London. That book was published chronologically later than that of Gottfried Leibniz, who also developed the system of calculus. For 10 points, name this English scientist who developed the laws of motion and gravity.

ANSWER: Sir Isaac **Newton**

4. In a play by this man, Celimene attracts the attentions of the title character, but her deception prompts him to retreat from society. This author died during a performance of his play The Imaginary Invalid. Madame Pernelle appears in a play by this man about a hypocritical character who gets betrothed to Mariane, the daughter of his friend Orgon. For10 points, name this French playwright of The Misanthrope and Tartuffe.

ANSWER: **Moliere** [or Jean-Baptiste **Poquelin**]

5. This ballet quotes the folk song "In the Garden" in a round-dance performed by thirteen enchanted princesses. Later in this ballet's first tableau, an E-flat minor lullaby follows an "Infernal Dance." After the death of the "deathless" antagonist, some people wake up after having been turned to stone. For 10 points, name this Stravinsky ballet in which King Kashchei is killed by Prince Ivan with the help of the title avian creature.

ANSWER: *The* ***Firebird***

What substance was licked by the primeval Norse cow Audhumbla to liberate Ymir?

ANSWER: **ice** [do not accept “water”]

What is the slope of the line perpendicular to the line passing through the points (1, 5) and (-3, -6)?

ANSWER: **-4/11**