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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 10**  **First Period, Fifteen Tossups** |

1. Abbasid postmaster Ibn Khordadbeh described members of this religious group who ran far-reaching merchant caravans, the Radhanites. This faith was practiced by Semien and Himyarite rulers in Yemen, and a major group of them still exists in China at Kaifeng. Many adherents of this faith were scattered by the Alhambra decrees in 1492. European ghettos traditionally housed, for 10 points, members of what Abrahamic religion that venerates the Torah?

ANSWER: **Judaism** [or equivalents such as **Jew**ish, etc.]

2. Albert Einstein won his Nobel for elucidating the emission of these particles in response to incident photons. These particles, or their antiparticle, are emitted by beta decay. By adjusting an electric field to balance the weight of an oil drop, Robert Millikan determined the charge of these particles. These particles are over a thousand times smaller than those found in the nucleus. For 10 points, name these negatively-charged subatomic particles.

ANSWER: **electron**s [or **e minus**]

3. What name is given to the sacred fig tree under which Buddha meditated to learn the Four Noble Truths?

ANSWER: **Bodhi** Tree [or **Bo** Tree; or **Peepal** Tree]

4. This phenomenon is a result of a weakening of the Walker Circulation and tend to depress hurricane formation because of their associated vertical wind shear. An index for this phenomenon measures the difference in air pressure in Tahiti and Darwin, Australia; negative values on that index, the Southern Oscillation Index, indicate this phenomenon is occurring. For 10 points, name this warming of the water in the eastern Pacific that is the opposite of "La Nina."

ANSWER: **El-Nino**-Southern Oscillation [or **ENSO**; or **Southern Oscillation** until it is read; do not accept "La Niña"]

5. This author included the essays “My Dungeon Shook” and “Down At the Cross” in his book *The Fire Next Time.* David has an affair with the title Italian man of this writer’s *Giovanni’s Room.* The protagonist’s abusive stepfather Gabriel becomes a preacher in this author’s first novel, which is about John Grimes. For 10 points, name this African-American author of *Go Tell It on the Mountain.*

ANSWER: James **Baldwin** [or James Arthur **Baldwin**]

6. Three years after this case was decided, an Illinois Republican drafted the Hyde Amendment as a response to it. Its plaintiff was represented by Sarah Weddington, and eventually came to oppose this case’s decision. This case, whose majority opinion was penned by Harry Blackmun, was a companion to Doe v. Bolton, and was prompted by Norma McCovey’s unwanted pregnancy. For 10 points, name this 1973 Supreme Court case that legalized most abortions.

ANSWER: ***Roe*** *v. Wade*

7. Treatment for this condition sometimes involves using dopamine antagonists like Chlorpromazine and Clozapine, which can lead to tardive dyskinesia. Patients with this condition sometimes exhibit a "waxy flexibility" and delusions of grandeur. This condition is divided into catatonic and paranoid forms. For 10 points, name this mental disorder in which a patient has trouble determing what is real and which can involve auditory hallucinations.

ANSWER: **schizophrenia**

8. This empire faced a rebellion led by Aristagoras, the Ionian Revolt.This empire's general Mardonius was killed at the battle of Plataea, which occurred the same day this empire was defeated at Mycale. This empire's ruler watched its defeat in the strait of Salamis from a mountain weeks after a costly victory against the Spartans at the Battle of Thermopylae. For 10 points, name this empire which, under Xerxes (ZERK-seez), made an unsuccessful attempt to conquer Greece.

ANSWER: First **Persian** Empire [or **Achaemenid** Empire]

9. This theorist relied on Reo Fortune's research in Dobu to put forth a theory about treachery as the central action of island culture. This thinker was working for the U.S. Office of War Information when she described a "militaristic and submissive" culture that she had never seen firsthand. For 10 points, name this student of Franz Boas, an anthropoogist who wrote *The Chrysanthemum and the Sword* about Japan and the anthropological theory text *Patterns of Culture.*

ANSWER: Ruth **Benedict** [or Ruth **Fulton**]

10. In this novel, a "resurrection man" named Jerry Cruncher robs graves and is employed by Tellson's Bank. Jarvis Lorry and Lucie go to find Dr. Alexandre Manette in this novel. Later in this novel, Sydney Carton sacrifices himself to save Charles Darnay from the guillotine. For 10 points, name this Charles Dickens novel that opens, "It was the best of times, it was the worst of times," and takes place in the metropolises London and Paris.

ANSWER: *A* ***Tale of Two Cities***

11. Tourism is common in this country’s southern Algarve region. Port wine, which is named after this country’s second largest city of Porto, is produced along its Douro River. The archipelagos of Madeira and the Azores belong to this country. The Vasco da Gama Bridge spans the Tagus River in this country’s capital, Lisbon. For 10 points, name this country that shares the Iberian Peninsula with Spain.

ANSWER: **Portugal** [or **Portuguese** Republic]

12. This process happens to Lemminkainen after his mother uses a rake near the black river of Tuonela in the *Kalevala*. Hippolytus underwent this process thanks to the Greek god Asclepius. This happened to another god after Isis fashioned a phallus made of gold or wood and combined it with thirteen other pieces. For 10 points, name this process undergone by Osiris to bring him back after his murder.

ANSWER: **resurrection** [or being **revive**d from the dead; or **reassembly**; or **reanimation**; or answers indicating that the pieces of a dismembered person are being **put back together**]

13. A song on this album is about a man who “went out tiger hunting with his elephant and gun” called “The Continuing Story of Bungalow Bill.” The song “Birthday” is the only one on this album with two lead vocalists. Eric Clapton appears on this album’s “While My Guitar Gently Weeps.” A song on this album is about a creature which sings “in the dead of night” and is called “Blackbird.” For 10 points, name this Beatles album, which opens with “Back in the USSR” and is named for its minimalist cover.

ANSWER: *The* ***White Album*** [prompt on *The* ***Beatles***]

14. A form of this technique precedes mass spectrometry in a common forensic procedure. A retardation factor can be calculated as the ratio of two migrating distances in this procedure. Elution is used to flush out a column after this technique is over. It uses a mobile phase and a stationary phase to separate a mixture into individual components. For 10 points, name this lab technique which can be used to separate the colors of a marker on a piece of paper.

ANSWER: **chromatography** [or paper **chromatography**; or gas **chromatography**; or liquid **chromatography**]

15. In this painting, a blue-clad woman is reflected in a circular mirror, hung on the back wall next to gold beads with green tassels. A wooden statue sits on a bedpost in this painting’s top half. Fruit lie on a desk under a window, outside of which is a cherry tree. A pair of clogs is depicted on the floor next to a dog standing in between this painting’s handholding central figures. For 10 points, identify this painting of an Italian merchant and his wife, by Flemish artist Jan van Eyck.

ANSWER: *The* ***Arnolfini Wedding*** [or *The* ***Arnolfini Marriage***; or *The* ***Arnolfini Double Portrait***; or ***Portrait of Giovanni Arnolfini and his Wife***]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 10**  **Directed Round** |

1A. What outer layer of the Sun is prone to namesake "mass ejections" and is visible during a solar eclipse?

ANSWER: **corona**

1B. What private first class was convicted in July 2013 of violating the Espionage Act, but avoided punishment on “aiding the enemy” by giving documents to WikiLeaks?

ANSWER: Chelsea **Manning** [or Bradley Edward **Manning**]

2A. What German term describes a novel in which the protagonist undergoes a sentimental education and experiences significant personal growth?

ANSWER: **Bildungsroman**

2B. What contemporary of Milton’s wrote long poems in heroic couplets including *Absalom and Achitophel,* *The Hind and the Panther,* and “Mac Flecknoe.”

ANSWER: John **Dryden**

3A. This is a 20-second calculation question. What is the sum of the infinite geometric series whose first three terms are 1, 1/3, and 1/9?

ANSWER: **3/2** [or **1.5**; or **one and one-half**]

3B. This is a 30-second calculation question. Two cards are drawn, without replacement, from a deck containing only the eights, nines, tens, jacks, queens, kings, and aces of each suit. What is the probability that at least one is a jack?

ANSWER: **17/63** [or **204/756**]

4A. What title denotes the regional governors of the Persian empire, and was similarly adopted by Greek and Parthian successor states?

ANSWER: **Satrap**s

4B. What German mathematician compiled a list of 23 unsolved problems for attendees at a 1900 conference to solve?

ANSWER: David **Hilbert**

5A. What actor played corrupt police officer Colin Sullivan in *The Departed* and Linus Caldwell in the *Oceans* film series?

ANSWER: Matt **Damon** [Matthew Paige **Damon**]

5B. Tres Leches is a popular Latin American example of what tasty dish, translated as “torta” in Spanish and “gateau” in French?

ANSWER: **cake**

6A. Which neurotransmitter that binds to NMDA and AMPA receptors is the primary excitatory neurotransitter in the central nervous system?

ANSWER: **glutamate**

6B. What type of high male voice common in Italian Baroque opera was once performed by eunuchs and is now approximated by countertenors?

ANSWER: **castrato** [or **castrati**]

7A. What twentieth-century American writer caused a scandal with his sexually explicit novels *Tropic of Cancer* and *Tropic of Capricorn*?

ANSWER: Henry **Miller**

7B. Samuel Johnson modeled his poem “The Vanity of Human Wishes” on a work of what Roman poet, known for his collection of sixteen satires?

ANSWER: **Juvenal** [Decimus Iunius **Iuvenal**is]

8A. This is a 30-second calculation question. If sine of *x* equals 1/6, then what are the two possible values for sine of 2*x*?

ANSWER: square **root** of **35**, **over 18** and **negative** square **root** of **35**, **over 18** [or **plus or minus** square **root** of **35**, **over 18**; or **rad**ical **35**, **over 18** and **negative rad**ical **35**, **over 18**; or **plus or minus rad**ical **35**, **over 18**]

8B. This is a 20-second calculation question. In triangle ABC, segment AB has length 6 centimeters and segment BC has length 8 centimeters. What is the range of possible values for the length of segment AC?

ANSWER: **between 2 and 14** [or **2 to 14**; do not accept answers including the word "inclusive"]

9A. What set of people was killed by the tenth and last plague suffered by Egypt as Pharaoh refused to let the Israelites go in Exodus?

ANSWER: Egyptian **first-born** sons [or Egyptian **first-born** children]

9B. What map projection, useful in navigation for its straight rhumb lines, is often criticized for wildly exaggerating the size of the world’s polar regions?

ANSWER: **Mercator** projection

10A. The trial of Adolf Eichmann occurred during the second prime ministry of what man, also the founding PM of Israel?

ANSWER: David **Ben-Gurion**

10B. What type of short religious songs, such as “Roll, Jordan, Roll,” were often sung by African-American slaves in the field before emancipation?

ANSWER: Negro **spiritual**s

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 10**  **Third Period, Fifteen Tossups** |

1. One technique for doing this first assumes "if not q, then not p" and is known as contraposition. Another way of writing one is to show a statement is true for *n* and then to show it to be true for *n* + 1, which is called induction. They are sometimes concluded by the abbreviation *Q.E.D.*. Examining every possible case for one is known as one "by exhaustion." For 10 points, give this term for arguments that demonstrate a mathematical statement is true.

ANSWER: **proof**s

2. In a poem by this author, the speaker claims “kisses are a better fate than wisdom” and states, “life’s not a paragraph.” The four title characters “went down to the beach” in this man’s “maggie and milly and molly and may.” A poem by this man describes a “warmest heart” that “recoiled at war,” belonging to “Olaf glad and big.” For 10 points, name this American author of "anyone lived in a pretty how town" who frequently ignored punctuation and capitalization.

ANSWER: E. E. **Cummings** [Edward Estlin **Cummings**]

3. One stage of the Allied invasion of this country was called Operation Husky. This country helped to start World War II by invading Ethiopia in 1936. This country, which was represented by Vittorio Orlando at the Paris Peace Conference, had the same king during both world wars. That king of this country, Victor Emmanuel III, removed a certain fascist from power in 1943. For 10 points, name this country which was led by Benito Mussolini during World War II.

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

4. In 2014, this country proposed a solar power project around Lop Nur, found in its Tarim Basin at at the east of the Taklamakan Desert. More nuclear reactors are currently under construction in this country than any other, part of its bid to reduce its world-leading production of coal. This country has also sought to address its energy crisis by building the massive Three Gorges Dam on the Yangtze. For 10 points, identify this country whose cities include Shanghai and Beijing.

ANSWER: **China**

5. In the 2009 Skills Competition, this player scored a goal while wearing sunglasses and using two sticks given to him by countryman Evgeni Malkin. This man’s poor defensive play has frustrated coaches Dale Hunter and Bruce Boudreau. This player won his third Hart Trophy after he led the NHL in goals during the 2012-13 season, and he beat out rival Sidney Crosby for the 2006 Calder Trophy. For 10 points, name this winger for the Washington Capitals.

ANSWER: Alexander **Ovechkin**

6. A fast F-minor melody played by three of these instruments represents a broom coming to life in Paul Dukas's *The Sorcerer's Apprentice.* Donizetti's aria "Una furtiva lagrima" begins with a solo for this instrument. *The Rite of Spring* opens with a solo for this instrument that starts on a high C. The bass voice in a woodwind quintet is provided by this instrument, which represents the grandfather in *Peter and the Wolf.* For 10 points, name this really low double-reed woodwind instrument that's not the oboe.

ANSWER: **bassoon** [or **fagott**o]

7. This disease is commonly tested for by observing overexpression of the HER2/neu protein. Ductal and lobular carcinomas are the most common types of this disease, which can be caused by mutations in the genes BRCA (burr-KUH) 1 and 2. An extreme measure against this disease is preventative mastectomy. Concern over early detection of this cancer led to a rise in the number of mammograms performed. For 10 points, name this cancer of the tissue where milk production takes place.

ANSWER: **breast** cancer

8. This president popularized the term “bloviate” to mean pompous speaking. During his term, the U.S. reduced its number of warships to thirty during the Washington Naval Conference. While this man named Andrew Mellon to the Treasury, he also appointed cronies in his “Ohio Gang” to key positions. This man was elected with the slogan “return to normalcy.” For 10 points, name this President elected in 1920 whose term was marked by scandals like Teapot Dome.

ANSWER: Warren Gamaliel **Harding**

9. In this film, slit-scan photography of high contrast images such as op-art paintings and Moire patterns were used to create colored lights in the "stargate" sequence. This film features a match cut with an airborne bone, and a “docking” scene set to *The Beautiful Blue Danube*. A character in this film sings “Daisy” as it is being unplugged by astronaut David Bowman. For 10 points, name this Stanley Kubrick film written by Arthur C. Clarke, featuring a black monolith and the computer HAL 9000.

ANSWER: ***2001****: A Space Odyssey*

10. In a novel by Luigi Pirandello, Vitangelo goes mad after his wife comments on the crookedness of this object. It titles a story in which it becomes State Councilor and is later found in a loaf of bread by its owner, Major Kovalyov. In addition to a Nikolai Gogol story about this object, a novel by Carlo Collodi describes a character whose lies trigger its growth. For 10 points, identify this facial structure that was notably large on Pinocchio.

ANSWER: **nose**

11. One of these animals failed, along with Eurytion, to prevent the abduction of Geryon's cattle. Another of these animals, owned by Cephalus, was turned into stone along with the Teumessian Fox. After Orion was raised to the heavens, one of these creatures was created to be his hunting companion, explaining a common name for Sirius. For 10 points, name these domestic animals that include a three-headed guard of the underworld, Cerberus.

ANSWER: **dog**s

12. The title character of this play exclaims, “Blow winds, and crack your cheeks! Rage, blow!” in a famous speech. Climactic scenes in this play include the blinding of Gloucester, who is betrayed by his wicked son Edmond. The title character of this play divides his land between his ungrateful daughters Regan and Goneril, banishing his virtuous daughter Cordelia. For 10 points, name this Shakespeare tragedy about a legendary king.

ANSWER: ***King Lear*** [or *The Tragedy of* ***King Lear***]

13. The total amount of this quantity through a closed surface is always zero by one of Maxwell's equations. The integral form of Faraday's law equates the production of an emf with a change in this quantity. Measured in webers, it is calculated as the dot product of the magnetic field strength and the area vector. For 10 points, identify this quantity which can loosely be defined as the "amount" of magnetic field going through a surface and is often denoted by phi.

ANSWER: **magnetic flux** [or **phi** until it is read]

14. This country's 2014 elections focused on the role of the Government Communications Security Bureau. This country's prime minister was criticized in 2012 for describing an interviewer's shirt as "gay." In 2014, this country's Internet Mana Party lost its only seat after allying with imprisoned download mogul Kim Dotcom. For 10 points, name this country which re-elected John Key's National Party in September 2014 elections that included special Maori districts.

ANSWER: **New Zealand**

15. The Potemkin villages were built to impress this ruler. This ruler purchased the personal library of Denis Diderot. This ruler was the only person to take part in all three partitions of Poland. This leader faced a revolt by the Cossacks called Pugachev’s Rebellion, and acquired Crimea through the Russo-Turkish Wars. This leader came to power after the assassination of her husband, Peter III. For 10 points, name this longest-serving female ruler of Russia.

ANSWER: **Catherine the Great** [or **Catherine II**; prompt on **Catherine**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 10**  **Tiebreaker/replacement questions** |

1. A character created by this author remarks, “It takes all the running you can do, to keep in the same place.” The sequel to his most famous novel is entitled *Through the Looking Glass* and contains such poems as “The Walrus and the Carpenter” and one that mentions the “Jubjub bird” and the “Bandersnatch.” He created the March Hare and the Hatter. For 10 points, name this British author of “Jabberwocky” and *Alice’s Adventures in Wonderland.*

ANSWER: Lewis **Carroll** [or Charles Luttwidge **Dodgson**]

2. One of these things exists for a matrix if its columns are linearly independent, or alternately if its determinant is nonzero. For the statement if *p*, then *q*, this term describes the statement if not *p*, then not *q*. One of these can be found for a function by reflecting it across the line *y* equals *x*. The additive type for a number is its negative. For 10 points, give this term that for multiplication describes the relationship between two and one-half.

ANSWER: **inverse**

3. This country is home to the eastern portion of a region called the llanos. One of this country’s natural wonders is found in Canaima National Park, coming off of Auyuntepui. This country, which narrowly beats out Saudi Arabia for most oil reserves in the world, is where the Orinoco River flows into the sea and is the location of Angel Falls. For 10 points, name this country east of Colombia, whose capital is Caracas.

ANSWER: **Venezuela** [Bolivarian Republic of **Venezuela**; or Republica Bolivariana de **Venezuela**]

4. A namesake museum dedicated to this artist is located in the North Shore district of Pittsburgh. The highest-grossing painting by this man, "Silver Car Crash," is part of his *Death and Disaster* series. Valerie Solanas shot this man in his studio, The Factory, where he created silkscreen paintings depicting multiple copies of Elvis Presley and Marilyn Monroe. This man coined the expression "fifteen minutes of fame." For 10 points, identify this pop artist who painted icons of commercialism, like Campbell's soup cans.

ANSWER: Andy **Warhol** [Andrew **Warhola**]

5. These missives triggered opposition from men who signed their opposition "Cato" and "Brutus." The fifty-first of these writings declares that "ambition must be made to counteract ambition." This eighty-five part series was sent to newspapers in New York City under the pseudonym "Publius" and was written by John Jay, James Madison, and Alexander Hamilton. For 10 points, name this series of arguments for the ratification of the Constitution.

ANSWER: **Federalist Papers**

What nineteenth-century American poet wrote “The Chambered Nautilus” and “Old Ironsides”?

ANSWER: Oliver Wendell **Holmes**

What is the period of the function given by "f of *x* equals 3 times the cosine of the quantity 4 times *x*?"

ANSWER: **pi over 2** [or **pi divided by 2**; or **one-half pi**]