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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 19**  **First Period, Fifteen Tossups** |

1. Ryan Hecker created the original ten item agenda for this movement. The Gadsden flag is a major symbol of this movement and features a coiled snake and the words "Don't Tread on Me." This group often “primaries” Republican candidates deemed insufficiently conservative. For 10 points, name this group which includes Michelle Bachmann and Sarah Palin, and is named after a revolutionary event in Boston Harbor.

ANSWER: **Tea Party** Movement

2. In this game, naming an animal "Dinnerbone" will cause it to appear upside down. An update to this game added a one-eyed aquatic creature known as the Guardian. Players in this game can construct a portal to the Nether by using obsidian and a flint and steel. Enemies in this game include the bow-wielding Skeletons and the explosive Creepers. For 10 points, name this minimalistic game made by Mojang, set in a world made of blocks.

ANSWER: ***Minecraft***

3. One myth from this modern-day country describes a monstrous frog that swallowed all the world's water until its defeat by Glooscap. In another folk story from this country, witches that break social taboos can become shapeshifting skin-walkers. Wooden dolls representing spirits called Kachinas are created by various groups in this country, including the Zuni and Hopi. For 10 points, name this modern-day country whose folk traditions include myths of the Navajo and Iroquois.

ANSWER: The United States of **America** [or the **U.S.**; or **Canada** until “Kachinas” is read]

4. These devices are located at the ends of the arms of the Michelson-Morley interferometer. These devices cannot suffer from chromatic aberrations, but commonly suffer from spherical aberrations. Beam splitters often use half-silvered types of these devices. When they are flat, they form virtual, unmagnified images. Incident and exiting rays make congruent angles, relative to the surface normal, on these devices. For 10 points, name these objects that reflect incident light, unlike lenses.

ANSWER: **mirror**s [or **reflector**s until "reflect" is read]

5. This group was visited by the missionary Samuel Worcester, who was the plaintiff in an 1832 Supreme Court case concerning Indian land rights. Their writing system, created by Sequoyah, aided in their reputation as one of the Five Civilized Tribes. Following the Treaty of New Echota, this tribe was forced to leave Georgia during the Van Buren presidency. For 10 points, name this Native American tribe who was forced to relocate to Oklahoma in the Trail of Tears.

ANSWER: **Cherokee**

6. A mutation in a gene coding for an enzyme in this organelle causes a disease characterized by a cherry-red spot on the retina and death by age four. That enzyme found in this organelle is responsible for the biodegradation of gangliosides and is hexosaminidase A, which is mutated in Tay-Sachs disease. This organelle uses a proton pump to maintain an acidic environment. For 10 points, name this enzyme-rich organelle responsible for breaking down biomolecules as the "recycling units" of the cell.

ANSWER: **lysosome**

7. Bertel Thorvaldsen designed a wounded one of these creatures carved into a rock face in Lucerne, Switzerland. The preserved entrance to Mycenae is named for these animals, whose only Asian population is found in Gujarat's Gir Forest. These creatures support a flat fountain in a namesake court in the Alhambra palace. Large numbers of these apex predators can be found in the Serengeti. For 10 points, name this big cat whose males sport prominent manes.

ANSWER: **lion**s [or **P**anthera **Leo**]

8. Components are removed from this phase during stripping. This phase lies at the bottom of a T-x-y diagram, below the bubble and dew point lines. Azeotropes are always found in this phase. The mole fraction in this phase multiplies the vapor pressure in Raoult's Law. This phase lies at the top right of most phase diagrams. For 10 points, name this phase of matter that exists for water between 0 and 100 degrees Celsius.

ANSWER: **liquid**s

9. This character's friend tricks him into taking action by throwing forged letters through his window. In an address to the common people, this character cites the title character's ambition to justify his own actions, for which he is sarcastically called an "honorable man" in a competing funeral oration by Antony. For 10 points, name this Shakespeare character who, along with Cassius, leads a band of conspirators in killing Julius Caesar.

ANSWER: **Brutus** [Marcus Junius **Brutus**]

10. Theologians in this country debated the eating of meat during Lent in the Affair of the Sausages. The Kappel wars were fought in this country, where Michael Servetus was burnt at the stake. A man from this country visited Germany to debate at the Marburg Colloquy. The author of *The Institutes of the Christian Religion* ruled a city in this country. For 10 points, name this country where Ulrich Zwingli and John Calvin led the reformation in cities like Zurich and Geneva.

ANSWER: **Switzerland** [or Old **Swiss** Confederacy]

11. In this novel, a character’s true identity becomes obvious after he lifts a carriage off a man stuck in the mud. The Friends of the ABC, led by Enjolras, participate in a revolt during the June Rebellion in this book. In this novel, the police inspector Javert hunts down a man who adopts Cosette at the urging of Fantine, Jean Valjean. For 10 points, name this Victor Hugo novel.

ANSWER: *Les* ***Miserables*** [or *The* ***Miserable Ones***; or *The* ***Miserable***]

12. This leader signed the Elysee Treaty of friendship with Konrad Adenauer. While visiting the 1967 World Expo, this man addressed a crowd with the phrase “Vive le Quebec libre!” This man’s demand for a new constitution led to a 1958 referendum that created the Fifth Republic. Under this man’s leadership, the Evian Accords ended Algerian War. This man was succeeded by Georges Pompidou, and he led the government of Free France during World War II. For 10 points, name this French president.

ANSWER: Charles de **Gaulle** [or Charles André Joseph Marie de **Gaulle**]

13. George Balanchine's staging of this ballet uses Alexandre Dumas, pere's version of the original story. Pieces in this ballet include the "Spanish Dance," "Chinese Dance" and "Arabian Dance." This ballet uses an unusual percussion instrument known as the celesta in its "Dance of the Sugar Plum Fairy." It also includes a frenzied battle between gingerbread soldiers and mice. For 10 points, name this ballet about a toy given to Clara, by Peter Tchaikovsky.

ANSWER: ***The Nutcracker*** [or ***Shchelkunchik***; or ***Casse-Noisette***]

14. A poem in this collection depicts a creature who "launch'd forth filament, filament, filament." In addition to "A Noiseless Patient Spider," another poem in this collection describe a "barbaric yawp" in its last section. The narrator of another poem in this collection tells how "the great star early droop'd in the western sky" with the death of Abraham Lincoln. For 10 points, name this poetry collection that includes *Song of Myself,* by Walt Whitman.

ANSWER: ***Leaves of Grass***

15. One god of these things kidnapped Oreithyia and was the father of a pair of winged Argonauts named Zetes and Calais. Another god of these things became jealous of Apollo and redirected a discus to kill Hyacinthus. The sailors of Odysseus mistook a bag containing these phenomena for gold. The "North" and "West" ones are governed by Boreas and Zephyrus, respectively. For 10 points, name these weather phenomena controlled by Aeolus.

ANSWER: **wind**s [or **anemoi**; or North **Wind**; or West **Wind**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 19**  **Directed Round** |

1A. What ancient philosophical school, named for a “painted porch” used by Zeno in Athens, sought *apatheia* through freedom from emotions?

ANSWER: **Stoic**ism [or word forms]

1B. What case is the subject in a Latin sentence?

ANSWER: **nominative** case

2A. What country is the home country of 2011 Nobel Prize winner Tawakkol Karman and the basis of operations for Al-Qaeda in the Arabian Peninsula?

ANSWER: **Yemen** [Republic of **Yemen**]

2B. What year was dubbed the “Annus Mirabilis” by John Dryden after England survived both the St. James Day Battle and the Great Fire of London?

ANSWER: **1666** CE

3A. This is a 20-second calculation question. What is the sine of the third-quadrant angle that has a reference angle of sixty degrees?

ANSWER: **negative** square **root** of **3**, **over 2** [or **negative rad**ical **3**, **over 2**; or equivalents including **divided by** instead of "over"; or **negative** square **root** of **three-fourths**; or **negative radical three-fourths**]

3B. This is a 20-second calculation question. Out of 500 students, 50 are left-handed, 40 are in AP English, and 5 are both left-handed and in AP English. What is the probability that a student in AP English is left-handed?

ANSWER: **1/8** [or **5/40**; or **0.125**]

4A. The Suffolk Resolves promised a colonial boycott unless what derisively-named acts – including the Boston Port and Quartering Acts – were repealed by Britain?

ANSWER: The **Intolerable** Acts [or the **Coercive** Acts]

4B. Identify the British imperialist former namesake of Zimbabwe whose ambition for a "Cape-to-Cairo Railway" was briefly overshadowed by his complicity in the Jameson Raid.

ANSWER: Cecil **Rhodes**

5A. Name the male co-victor of the seventy-fourth Hunger Games, played by Josh Hutcherson in the film adaption.

ANSWER: **Peeta** Mellark [or Peeta **Mellark**]

5B. Which neurotransmitter, also known as 5-HT, is associated with good feelings, thus making it a good target for antidepressants that selectively block its reuptake in the synaptic cleft?

ANSWER: **serotonin** [or **5-hydroxytryptamine**]

6A. What procedure, used in the derivation of the quadratic formula, involves eliminating a linear term from a polynomial, leaving a shifted quadratic term and a constant?

ANSWER: **completing the square** [or obvious equivalents]

6B. What landscape architect, along with his partner Calvert Vaux, designed Central Park in Manhattan and many other municipal parks such as Boston’s Emerald Necklace?

ANSWER: Frederick Law **Olmsted**

7A. In a mystery story, what two-word term refers to a tantalizing clue designed to throw readers off the track of the real solution?

ANSWER: **red herring**

7B. What formations come in lateral and terminal varieties and consist of accumulations of glacial debris?

ANSWER: **moraine**s

8A. This is a 30-second calculation question. The longer leg of a right triangle measures 24 inches. Give the three possible values of the shorter leg's length such that the shorter leg and hypotenuse of the triangle both measure a whole number of inches.

ANSWER: **7, 10, and 18** inches

8B. This is a 30-second calculation question. Find all horizontal and vertical asymptotes of the graph of the rational function given by "f of *x* equals quantity *x* squared plus 8 *x* plus 15, over the quantity *x* squared plus 6 *x* plus *5*."

ANSWER: ***y* = 1** and ***x* = -1** [or ***x* = -1** and ***y* = 1**; or **horizontal** asymptote at y = **1** and **vertical** asymptote at x = **-1**; prompt on **-1 and 1**; prompt on **1 and -1**; do not accept or prompt on additional answers]

9A. What mythological figure declares his intention “to strive, to seek, to find, and not to yield” in a dramatic monologue by Lord Tennyson?

ANSWER: **Ulysses** [or **Odysseus**]

9B. Both Milorad Pavic and the author of *The Bridge on the Drina,* Ivo Andric, wrote in what language spoken today on the streets of Belgrade?

ANSWER: **Serbian**

10A. What Chinese province of “four rivers,” whose capital is Chengdu, is famous for its spicy cuisine that utilizes a namesake peppercorn?

ANSWER: **Sichuan** [or **Szechuan**]

10B. What wife of a Massachusetts Bay Colony governor wrote the poetry collection *The Tenth Muse Lately Sprung Up in America*?

ANSWER: Anne **Bradstreet**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 19**  **Third Period, Fifteen Tossups** |

1. On this musician’s album *American IV,* he changed a lyric to “I wear this crown of thorns” in his cover of Nine Inch Nails’ “Hurt.” He was backed by Mexican horns in a song co-written by his wife about a place that "burns burns burns," and he performed a song for an audience of California inmates which featured the line “I shot a man in Reno, just to watch him die.” For 10 points, name this husband of June Carter and singer of “Ring of Fire” and “Folsom Prison Blues.”

ANSWER: Johnny **Cash**

2. This concept has choleric, melancholic, sanguine, and phlegmatic types, according to a book by Hans Eysenck. People who suffer from disorders of it may be histrionic or narcissistic. The MMPI or a Rorschach inkblot test may test it. A Myers-Briggs test for this thing gives its participants a four-letter identification and distinguishes them as either an introvert or extrovert. For 10 points, name this term given to an individual's collective traits.

ANSWER: **personality**

3. In this painting, a man in black raises a sword above his head; that man stands behind another in a top hat holding a musket. This painting's bottom right features a lifeless body wearing a blue jacket, on top of which stands a boy clutching two pistols. A man in a red bandana looks up at the title bare-breasted woman who holds a bayonetted gun in one hand and a French flag in another. For 10 points, identify this painting by Eugene Delacroix.

ANSWER: ***Liberty Leading the People*** [or ***La Liberte Guidant le Peuple***]

4. Searching and insertion in a binary search tree becomes much easier when implemented using this technique. A special case of the infinite loop can occur when using this technique and missing a base case, although a lack of stack space will eventually crash the program. This technique is contrasted with iterative solutions. An illustrative example when using it is to implement the factorial operation. For 10 points, name this technique that has a function call itself.

ANSWER: **recursion** [or word forums]

5. This man was the Attorney General of California during Japanese internment. This judge wrote the majority opinion in a Supreme Court case that drew upon Kenneth Clark’s “doll” studies. He was Chief Justice when *Miranda v. Arizona* ruled that suspects should be warned of their rights. This man chaired the commission that investigated the death of John F. Kennedy. For 10 points, name this Chief Justice during the 1950’s *Brown v. Board of Education* case.

ANSWER: Earl **Warren**

6. Soldiers on one side of this war used the cry “Remember Majuba,” referring to an earlier conflict between its combatants. The ship Gelderland was sent by Queen Wilhelmina of the Netherlands to rescue a leader in this conflict. The Peace of Vereeninging ended this war. This war began when Paul Kruger demanded that troops leave the borders of the Orange Free State and Transvaal Republic. For 10 points, name this conflict between the British Empire and a namesake group of settlers in modern-day South Africa.

ANSWER: Second **Boer** War [or Second Anglo-**Boer** War; or Tweede **Vryheidsoorlog**]

7. Repeated exposure to benzene mainly causes this type of cancer. An RNA retrovirus called FeLV [felve] causes symptoms similar to this cancer in cats. The presence of the Philadelphia chromosome is a good test for the chronic myeloid type of this cancer. Because this cancer starts i the bone marrow, patients are deficient in platelets and bruise easily. For 10 points, name this type of cancer which causes an explosive increase in abnormal white blood cells and is the most common childhood cancer.

ANSWER: **leukemia** [prompt on **cancer** of **white blood cell**s; do not accept "lymphoma" or "myeloma"]

8. This author parodied his experience at MI6 in his novel about James Wormold, a vacuum cleaner salesman who passes off sketches of his vacuum cleaner parts as military installations. In another of his novels, the “mestizo” uses the confession of a dying man as a trap to allow the “lieutenant” to capture the protagonist, an unnamed “whiskey priest.” For 10 points, name this British novelist who wrote *The Power and the Glory.*

ANSWER: Graham **Greene**

9. This term refers to a subset of a vector space closed under scalar multiplication. The total surface area of these shapes is pi times r times the sum of r and lateral height. The double variety of this figure can be produced by rotating a non-horizontal line about the x-axis. Passing a plane through a pair of these figures can produce a hyperbola, ellipse, or other namesake "sections." Their volume is one-third that of a cylinder with the same dimensions. For 10 points, identify these pyramids with a circular base.

ANSWER: **cone**s

10. Zora Neale Hurston documented this religion in the ethnographic travelogue *Tell My Horse.* Initiates to this religion perform Kanzo ceremony, and it venerates Rada spirits like Papa Legba. The god Bondye is served in this faith by mambos and houngans, who rely on intermediary spirits called Loas. For 10 points, name this syncretic African religion practiced in Haiti and Louisiana, which in popular conception involves sticking pins in dolls.

ANSWER: **Voodoo** [or **Vodou**; or **Vodun**]

11. A Byzantine emperor with this name Twenty Years Anarchy, launched the Iconoclasm, and founded the Isaurian Dynasty. A Pope of this name issued the bull *Exsurge Domine,* and an earlier Pope of this name bestowed a crown on Christmas Day 800. For 10 points, give this name whose tenth papal holder condemned Martin Luther and whose third crowned Charlemagne.

ANSWER: **Leo**

12. This park’s Thorofare Ranger Station touts itself as the remotest occupied area in the contiguous United States. This national park is home to a large source of igneous rock called Obsidian Cliff. The land that became this national park was extensively surveyed by Ferdinand Hayden in 1871. A landmark in this national park erupts approximately every ninety minutes. For 10 points, name this national park located mostly in Wyoming, home to Old Faithful.

ANSWER: **Yellowstone** National Park

13. The protagonist of a novel by this author learns to love reading from Mrs. Bertha Flowers. This author wrote a poem beginning, “A Rock, A River, A Tree.” That poem of hers, “On the Pulse of Morning,” was performed at the Clinton inauguration. An autobiographical book by this woman details her upbringing in Stamps, Arkansas. For 10 points, name this African-American writer who died in 2014, the author of *I Know Why the Caged Bird Sings.*

ANSWER: Maya **Angelou** [or Marguerite Annie **Johnson**]

14. Even though planets in the habitable zone of these stars are generally tidally locked, a perpetual font of extrasolar and potentially habitable planets, Gliese 581, is an example of them. This type of star also includes the next nearest star to the Earth, Proxima Centauri, and Barnard's Star. They are the most common in the Milky Way and are also the longest-lived, capable of sustaining fusion for a trillion years. For 10 points, name this low-mass, cool stars that are heavier and brighter than brown dwarfs.

ANSWER: **red dwarf**s

15. In this film, the protagonist tells a police officer, “When it comes to women, you’re a true Democrat.” After a group of German officers begins singing a patriotic song in this film, Victor drowns them out by leading a singing of “La Marseillaise.” In this film, the pianist Sam is exhorted to play “As Time Goes By,” angering Ilsa Lind’s ex-lover. This film is the source of the quote "Here's looking at you kid." For 10 points, name this film starring Humphrey Bogart as Rick Blaine, set in a Moroccan city.

ANSWER: ***Casablanca***

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 19**  **Tiebreaker/replacement questions** |

1. This school of philosophy was the basis for Derek Parfit's "repugnant conclusion." One adherent of this school of philosophy discussed the harm principle in his *On Liberty*. Another adherent of this school of philosophy originated the idea of the Panopticon prison system and was named Jeremy Bentham. For 10 points, name this school of philosophy which advocates for the greatest amount of happiness for the greatest number of people.

ANSWER: **Utilitarianism**

2. Frederic Joliot married a member of this family. Two members of this family discovered the piezoelectric effect. The point at which a paramagnetic material becomes ferromagnetic is named for a member of this family. Two scientists with this surname shared the 1903 Nobel Prize in Physics with Henri Becquerel. Polonium and radium were discovered by a woman with this surname. For 10 points, name this family of scientists who studied radioactivity, including Pierre and Marie.

ANSWER: the **Curie**s

3. In a play by this author, Lord Loam ungratefully mistreats the title butler after he saves the family when they are shipwrecked on a desert island. This author of *The Admirable Crichton* was the guardian of the sons of Arthur Llewelyn Davies, who inspired his most famous works. Those works by this author describe Tiger Lily, the Lost Boys, and Wendy Darling on the island of Neverland. For 10 points, name this Scottish creator of Peter Pan.

ANSWER: J. M. **Barrie** [or James Matthew **Barrie**]

4. This group engaged in the Beaver Wars against France, and they traditionally have forty-nine Clan Mothers. Also known as the Haudenosaunee, their constitution is the Great Law Of Peace. Their name translates to “people of the longhouse.” The Tuscaroras fled North Carolina to become this group’s sixth nation in 1722, which also includes the Senecas and Mohawks. For 10 points, name this Native American confederation co-founded by Hiawatha in upstate New York.

ANSWER: **Iroquois** Confederacy [or **Iroquois** League] [or **Haudenosaunee**]

5. In 1945, this country’s former colonizers massacred around 100 citizens in its northern wilaya of Setif. Two regions of this country are called the Grand Erg Occidental and the Grand Erg Oriental. Its northern Mediterranean coast includes the province of Oran. Almost completely covered by desert, this country borders Tunisia on its northeast. For 10 points, name this country west of Libya, the largest country by area in Africa.

ANSWER: **Algeria** [People’s Democratic Republic of **Algeria**]

What Norse god of war had his hand bitten off by Fenrir?

ANSWER: **Tyr**

Find all solutions to the equation tangent squared *x* minus 2 radical 3 tangent *x* plus 3 equals 0. Express your answer in terms of an integer *n*.

ANSWER: *x* equals **pi over 3 plus *n* pi** [or **pi over 3 plus 2 pi** times ***n*** and **4 pi over 3 plus 2 pi** times ***n***]