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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Conference Tournament 2015**  **Round 8**  **First Period, Fifteen Tossups** |

1. In October 2014, the daughter of this city's chief executive posted on Facebook that she paid for luxury clothing with taxpayer money. The leader of Scholarism breached the barrier to this city's Civic Square in September 2014. The Occupy Central group began protests in this city after the Standing Committee of the National People's Congress reaffirmed that candidates for election would be chosen by a nominating committee. For 10 points, name this city in China which has seen significant student protest for electoral reform through the Umbrella Revolution.  
ANSWER: **Hong Kong**

2. In this modern-day country, which is not Egypt, Hugo Winckler excavated clay tablets with the text of the oldest extant peace treaty. James Melaart excavated this country's Neolithic ruins at Catalhoyuk. In this country, Heinrich Schliemann discovered a set of gold artifacts that was dubbed Priam's Treasure. Hattusa, the capital of the Hittite empire, was located in this modern-day country that was once the site of Troy. For 10 points, name this country on the Anatolian peninsula whose capital is Ankara.  
ANSWER: Republic of **Turkey** [or **Turkiye** Cumhuriyeti]

3. A choral piece by this composer depicts a farmer and his wife laughing at a tax-collector's futile attempts to get money. This composer wrote a D minor concerto for two solo violinists. Felix Mendelssohn helped usher in a revival of this composer's pieces with a performance of his *St Matthew Passion.* This man composed set of six concertos for a German margrave and wrote a book of preludes and fugues for all 24 major and minor keys. For 10 points, name this Baroque German composer of the *Brandenburg Concertos* and *The Well-Tempered Clavier.*   
ANSWER: J.S. **Bach** [Johann Sebastian **Bach** ]

4. An example of this class of compounds causes a disease named after Barrett. Repeated relaxation of the cardiac sphincter allows that example of these substances to damage an organ in GERD. Pepsinogen is converted into pepsin after reacting with a type of these compounds secreted by gastric parietal cells. Proton pump inhibitors prevent these substances from degrading the lining of the esophagus after refluxing out of the stomach. For 10 points, name this class of compounds with a low pH that include "hydrochloric" and are contrasted with bases.  
ANSWER: **acid** s [or **hydrochloric acid** ; or **HCl** ; or **gastric acid** ; or **stomach acid** ; prompt on **hydrogen ions**; prompt on **protons**]

5. This city's university students protested the Treaty of Versailles as part of the May Fourth Movement. In 1976, protests in this city against the Gang of Four occurred amid mourning displays during the Qingming (ching ming) Festival. This city was where a man carrying shopping bags defiantly stood in front of a column of tanks. In 1989, student protests in this city resulted in Deng Xiaoping declaring martial law. For 10 points, name this Chinese city where the Tiananmen Square protests took place.  
ANSWER: **Beijing** [or **Peking**

6. These phenomena recur approximately every 30 days because that is the synodic period of their body. When the first example of these phenomena occurs in conjunction with their body being at its closest perigee, a proxigean spring tide occurs. Four of these phenomena are described by combinations of "waxing" or "waning" and "gibbous" or "crescent". These phenomena are visually distinctive states of an object that is Earth's only satellite. For 10 points, name these phenomena that include the "full" and "new".  
ANSWER: **phase**s of the **Moon** [or **lunar phase**s; or obvious equivalents]

7. This novel is the second chronologically in a series of five novels, in which it is followed by *The Prairie, The Pioneers,* and *The Pathfinder.* In this novel, the protagonist shoots the leader of the Hurons, Magua, and reunites with Chingachgook, a member of the title tribe. For 10 points, name this "Leatherstocking Tale," an early American novel about Hawkeye written by James Fenimore Cooper.  
ANSWER: *The* ***Last of the Mohicans***

8. This person's Jewish physician Rodrigo Lopez was executed for his alleged role in a poisoning plot. This ruler claimed to have the "heart and stomach of a king" in the Tilbury Speech. A plot against this ruler led by John Ballard and Anthony Babington was exposed by the spymaster Francis Walsingham. The "Protestant Wind" helped this ruler's navy under Francis Drake defeat an invasion. For 10 points, name this ruler who ordered the execution of Mary, Queen of Scots and faced the Spanish Armada, a Tudor queen of England.   
ANSWER: **Elizabeth I** [prompt on Elizabeth]

9. If a polygon has all vertices on lattice points, this quantity can be found in terms of the number of lattice points inside and on the polygon with Pick's Theorem. This quantity can be found for a quadrilateral inscribed in a circle by using Brahmagupta's formula. An integral can be used to find this quantity "under" a curve. This quantity is calculated using the semiperimeter in Heron's formula. For 10 points, name this quantity equal to the two-dimensional area bounded by a shape, and which is side length squared for a square.  
ANSWER: **area** [or **A** ]

10. In this city, a man using the alias Robert Kling parked a rented Ryder truck near a building. A Pulitzer winning photograph taken in this city showed a firefighter cradling a dying infant. Terry Nichols was sentenced to life imprisonment for his involvement in the violence perpetrated here. In this city, a terrorist attack carried out by Timothy McVeigh killed over a hundred people. For 10 points, name this city where a domestic terrorist bombing destroyed the Alfred Murrah Federal Building in 1995.  
ANSWER: **Oklahoma** City

11. The subjects of this man's portrait of cloth quality evaluators all wear black hats. A rediscovered picture of this man laughing was purchased by the Getty Museum in 2013, and along with a somber depiction "at the age of 63," is one of over ninety self-portraits by him. He painted seven men watching the title surgeon conduct a public dissection on a criminal, but is best known for his group portrait of a militia led by Franz Banning Cocq. For 10 points, name this Dutch painter of *The Anatomy Lesson of Dr. Nicolaes Tulp* and *The Night Watch.*   
ANSWER: **Rembrandt** van Rijn [or Rembrandt Harmenszoon **van Rijn**]

12. This deity protects a town from a storm by lifting an enormous hill over the villagers' heads. Before his birth, this deity's elder brother is transferred to the womb of Rohini, while this deity's other six brothers are killed by his evil uncle Kamsa. This deity gives his entire army to Duryodhana in preparation for a battle in which he serves as the charioteer of Arjuna and gives a narration recorded in the *Bhagavad Gita.* For 10 points, name this eighth avatar of Vishnu usually depicted with blue skin.  
ANSWER: **Krishna** [prompt on **Vishnu**; do not accept "Hare Krishna"]

13. This artist collaborated with Fred Archer on the "zone system" of grayscale tones. This man's book *Born Free and Equal* contains photographs of the everyday lives of Japanese-Americans in the Manzanar internment camp. This co-founder of the group f/64 (f stop 64) photographed two wooden crosses standing above the entrance to a pueblo church in New Mexico. Another photograph by him is entitled *Moon and Half Dome.* For 10 points, name this American photographer who took many landscape shots of Yosemite National Park.  
ANSWER: Ansel **Adams** [or Ansel Easton **Adams** ]

14. Montana's Yogo Gulch is a source of unusual varieties of this gemstone. This gemstone is the most common to exhibit an asterism caused by the inclusion of titanium dioxide impurities, giving it a "star" reflection. Unlike a similar gemstone, it does not contain trace amounts of chromium, but it is made of a crystalline form of aluminum oxide called corundum. Its most famous example is the Star of India. For 10 points, name this gemstone whose name comes from the Greek for blue, which is its most common color.  
ANSWER: **sapphire**

15. The third section of this poem includes three sequences pairing meticulous descriptions of hunting with the rituals of bedroom seduction. The author of this poem is also believed to have written the dream visions *Patience* and *Pearl.* For 10 points, name this Middle English poem about a beheading contest between one of King Arthur's knights and an unusually colored opponent.  
ANSWER: ***Sir Gawain and the Green Knight***

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 8**  **Directed Round** |

1A. What term describes substances that can behave as acids and as bases, such as ampholytes and amphiprotic molecules?  
ANSWER: **amphoteric**

1B. Lupus and rheumatoid arthritis are examples of what class of disorders that result from antibodies mounting inappropriate attacks on the body's own tissues?  
ANSWER: **autoimmune** disease [or **autoimmunity** ]

2A. The trapezoid rule can be used to approximate what type of integral whose boundaries are given, and therefore does not include a "plus C" term when evaluated?  
ANSWER: **definite** integral

2B. Which language uses three distinct writing systems called katakana, hiragana, and kanji?  
ANSWER: **Japanese** [or **Nihongo** ]

3A. This is a 20-second calculation question. A computer-generated sound wave is created using the equation y equals sine of 200 pi t. What is the period of this sound wave?  
ANSWER: **1/100** seconds [or **0.01** seconds]

3B. This is a 20-second calculation question. Suppose that Jared beats his little brother Timmy in a race four out of every five times. Timmy insists on continuing to race until he wins. What is the expected number of races that will occur?  
ANSWER: **5** races

4A. What William Blake poem questions a creature with "fearful symmetry" that burns bright "in the forests of the night"?  
ANSWER: "The **Tyger** "

4B. What city is home to the NHL team that has won the most Stanley Cups, last winning in the 1992-1993 season?  
ANSWER: **Montreal** [or **Montreal** Canadiens]

5A. What name was given to the prototypical female munitions worker during World War II, as found in popular songs and Norman Rockwell illustrations?  
ANSWER: **Rosie** the Riveter

5B. What female state Senator became famous for giving a filibuster against restrictive abortion legislation but lost a contentious 2014 race to become Governor of Texas?  
ANSWER: Wendy Russell **Davis** [or Wendy **Russell**]

6A. Which kind of metrical foot is comprised of an unstressed syllable followed by a stressed syllable and is found five times in a row in a namesake pentameter?  
ANSWER: **iamb**us

6B. What American author wrote *A Death in the Family?*  
ANSWER: James **Agee**

7A. What felt-covered, circular tent is a common dwelling in Central Asia and Mongolia, where it is also known as a ger?  
ANSWER: **yurt**

7B. What Biblical prophet advised Hezekiah on how to fend off Sennacherib's invasion and prophesied to Ahaz that a child named Immanuel would be born to a virgin woman?  
ANSWER: **Isaiah** [or **Yeshayahu** ; or **Ishiya** ]

8A. This is a 30-second calculation question. Regular octagon ABCDEFGH and regular hexagon JKLMNO each have side length 2. What is the ratio of the length of JM to the length of AD?  
ANSWER: **-2 plus 2** times the square **root** of **2** [or **-2 plus 2 rad** ical **2** ; or **2** square **root** of **2 minus 2** ; or **2 rad** ical **2 minus 2** ; or **4 over quantity 2 plus 2** square **root** of **2** ; or **4 over quantity 2 plus 2 rad** ical **2** ]

8B. This is a 30-second calculation question. Find all solutions to the equation 1 over quantity x plus 1, plus 1 over quantity x plus 2, equals one-half.   
ANSWER: **1 plus or minus** square **root** of **17** , all **over 2** [or **one-half plus or minus** square **root of 17 over 2** ; or **1 plus or minus rad** ical **17** , all **over 2** ; or **one-half plus or minus rad** ical **17 over 2** ]

9A. *The Bicycle Thieves* arose from the neorealist film movement of what European country, the birthplace of directors Federico Fellini and Sergio Leone?  
ANSWER: **Italy** [or **Italian** Republic]

9B. What Czech author and politician wrote a play in which Hugo Pludek rises in the ranks of the Liquidation Office titled *The Garden Party?*  
ANSWER: Vaclav **Havel**

10A. What British Liberal Prime Minister attempted to pass Irish Home Rule and feuded with Tory Benjamin Disraeli?  
ANSWER: William **Gladstone** [or William Ewart **Gladstone**]

10B. What country lost 90% of its male population during the War of the Triple Alliance?  
ANSWER: **Paraguay** [Republic of **Paraguay**]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 8**  **Third Period, Fifteen Tossups** |

1. This city's Pergamon Museum contains a full reconstruction of the Ishtar Gate. A prominent square in this city was named after Paris following the capture of Paris during the Napoleonic Wars. This city's Museum Island comprises part of a larger island in the Spree River. A landmark in this city is topped by a sculpture of a chariot pulled by four horses. This city, home to the Brandenburg Gate and the Reichstag building, was once divided by a wall that was demolished starting in 1989. For 10 points, name this capital of Germany.  
ANSWER: **Berlin**, Germany

2. This ruler wrote a limerick beginning "I don't want to be a Florus" to tease a poet who criticized his frequent travelling. This ruler founded a parliament called the Panhellenion in Greece and deified his lover Antinous. His creation of a Temple to Jupiter in Jerusalem sparked the Bar Kokhba revolt, which he brutally crushed. A construction project of this ruler was intended to deter Pict raids and was bolstered by his successor, Antoninus Pius. For 10 points, name this Roman emperor, the namesake of a wall in northern Britain.  
ANSWER: **Hadrian** [or Publius Aelius **Hadrianus** Augustus]

3. Absorption refrigerators usually use water or this compound as a working fluid. This compound dissolves solvated electrons and will react with carbon dioxide to make urea. This compound has equal 107.5 degree bond angles. Oxidation of this compound into nitric acid is accomplished by the Ostwald process. This liquid is made by reacting hydrogen and nitrogen together in the Haber process. For 10 points, name this common base and household cleaner with chemical formula NH3.  
ANSWER: **ammonia** [or **NH3** until it is read; do not accept "ammonium"]

4. As Secretary of War, this man oversaw initial construction on the Panama Canal. This man's Secretary of State, Philander C. Knox, helped to create the policy of dollar diplomacy. This man's decision to fire Gifford Pinchot and to support the Payne-Aldrich Tariff led to a challenge from Theodore Roosevelt's Bull Moose Party in the 1912 election. For 10 points, name this politician, who was the only man to serve as both Chief Justice of the Supreme Court and President of the United States.  
ANSWER: William Howard **Taft**

5. This author adapted Juvenal's tenth satire into his poem in heroic couplets entitled "The Vanity of Human Wishes." He wrote about an Abyssinian prince in his prose tale *Rasselas.* This writer's life was extensively chronicled by his admirer James Boswell. For 10 points, name this poet and scholar who single-handedly wrote *A Dictionary of the English Language.*   
ANSWER: Samuel **Johnson**

6. The Wylie transliteration scheme is used to romanize this religion's Kangyur and Tengyur texts. Tulkus are considered to be the corporeal form of masters of this religion. Tsongkhapa founded this religion's Gelug tradition, whose spiritual leader had to flee the Potala Palace and settle in Dharamsala during a 1959 uprising. That leader of this religion's "Yellow Hat" school is Tenzin Gyatso, the 14th Dalai Lama. For 10 points, name this religion practiced in a namesake plateau region of China.  
ANSWER: **Tibetan Buddhism** [prompt on Mahayana and Vajrayana **Buddhism** ]

7. One of this musician's first bands was called Mudcrutch and included his long-time collaborator, guitarist Mike Campbell. At 63 years of age, this musician is, along with Bob Dylan and Jeff Lynne, one of three surviving members of the 80s supergroup The Traveling Wilburys. "Breakdown", "Refugee", and "Don't Do Me Like That" were among his first hits with his current band. For 10 points, what musician released *Hypnotic Eye* in 2014, along with his band, The Heartbreakers?

ANSWER: Tom **Petty**

8. This political party took power after the strike laden "Winter of Discontent." A leader of this party narrowly avoided death in the Brighton hotel bombing. Its leader claimed "crime is crime" in refusing to compromise with Bobby Sands during a hunger strike on behest of the IRA. The leader of this party led her country through the 1984 miners' strike and also to a victory in the Falklands War over Argentina. For 10 points, name this political party once led in Great Britain by the only female Prime Minister, Margaret Thatcher.  
ANSWER: **Conservative** Party [or **Tory** Party; or **Conservative and Unionist** Party]

9. In a play by this author, Nancy and Charlie walk on the beach and encounter a couple of giant lizards named Leslie and Sarah. This playwright of *Seascape* wrote about a disturbed man named Jerry, who interrogates Peter on a park bench before impaling himself on his own knife. He also wrote about the bizarre games played during Nick and Honey's visit to the home of George and Martha. For 10 points, name this American playwright of *Zoo Story* and *Who's Afraid of Virginia Woolf?*   
ANSWER: Edward **Albee**

10. Crowds gathered at this place in response to a remark made by Gunter Schabowski at a press conference. This place was the site of *My God, Help Me to Survive This Deadly Love* , a depiction of two world leaders kissing. Peter Fechter was killed in the death strip next to this place, which was created on the orders of Walter Ulbricht. This structure was destroyed after the resignation of Eric Honecker, and it was crossed by Checkpoint Charlie. For 10 points, name this structure torn down in 1991, a barrier that divided the German capital during the Cold War.   
ANSWER: **Berlin Wall** [or **Berliner Mauer** ; or **Anti-Fascist Protection Rampart** ; prompt on Berlin]

11. This city was cut off from the rest of the United States after an earthquake in the No Man's Land storyline. Police officers in this city have included Renee Montoya and Harvey Bullock. It is home to Crime Alley and a sanitarium named Arkham Asylum, which is where criminals like Poison Ivy are imprisoned. This city was where the parents of millionaire Bruce Wayne were killed. For 10 points, name this city from DC Comics where the superhero Batman lives.  
ANSWER: **Gotham** City

12. In the last chapter of this novel, a young girl discovers her father is dead when she playfully pushes him off a bench. After attending the opera at Rouen, this novel's protagonist begins an affair by having sex in a carriage with the clerk Leon Dupuis. Earlier, the title character of this novel has an affair with Rodolphe Boulanger to escape the boredom of her marriage to Charles, a simple country doctor. For 10 points, name this novel by Gustave Flaubert.  
ANSWER: ***Madame Bovary***

13. The type one-b kind of these cells are sensitive to stretching in the Golgi tendon organ. The alpha type of these cells have their soma in the ventral horn. Both the upper and lower kinds of a class of these cells degenerate in ALS. Some of these cells release acetylcholine into the neuromuscular junction in response to an action potential. Receptors send info to the brain via the sensory type of these cells in the spinal cord. For 10 points, name these electrically-excitable cells that usually have dendrites and whose axons may be bundled into nerves.  
ANSWER: **neurons** [or **motor neurons** ; or **sensory neurons** ; accept **nerve cells** until it is read; prompt on **nerve** s]

14. This hero was attacked by inebriated centaurs while drinking wine with his friend Pholus. This hero temporarily took Atlas's place in holding up the heavens in order to allow Atlas to retrieve the golden apples of the Hesperides. As punishment for murdering the children of his wife Megara, this hero became a slave to Eurystheus and was forced to perform tasks such as slaying the Hydra and capturing Cerberus. For 10 points, name this demigod son of Zeus who completed twelve labors.  
ANSWER: **Heracles** [or **Hercules**]

15. The differential cross-section of these physical entities during one effect is given by the Klein-Nishina formula. These particles experience an increase in wavelength and a corresponding decrease in energy during Compton scattering. The energy of these particles is given by Planck's constant times frequency. These particles mediate the electromagnetic force. For 10 points, name these particles which are the quanta of light.   
ANSWER: **photon**s

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 8**  **Tiebreaker/replacement questions** |

1. This author created Charles Kinbote, a delusional man who annotates a 999-line poem by his idol John Shade. He also created the playwright and pornographer Clare Quilty in another novel. This author of *Pale Fire* wrote about Humbert Humbert's obsession with prepubescent "nymphets" in a controversial novel about Dolores Haze. For 10 points, name this Russian-American novelist who wrote *Lolita.*   
ANSWER: Vladimir **Nabokov**

2. After this country's Momotombo Volcano destroyed the city of Leon, Granada became its temporary capital. The Tipitapa River connects two of this country's larger lakes, one of which contains the Zapatera and Ometepe islands. A statue of Augusto Sandino stands in its capital. A majority of the Mosquito Coast covers this country's eastern border with the Caribbean Sea. This country's western tip juts into the Gulf of Fonseca. It borders Honduras to its north and Costa Rica to its south. For 10 points, name this Central American country whose capital is Managua.  
ANSWER: **Nicaragua** [Republic of **Nicaragua** ]

3. The heat dissipated by a conductor increases linearly with this quantity and exponentially with current. A Wheatstone bridge can be used to calculate an unknown value for this quantity. Like inductance, this quantity adds in series. This quantity is the inverse of conductance, is zero in superconductors, and equals voltage divided by current. The value of this property for a circuit device can be indicated by colored bands. For 10 points, name this property measured in ohms, a device's opposition to current flow.  
ANSWER: **resistance** [or **R**]

4. The Egyptologist Margaret Murray developed a now-discredited theory on a namesake cult of these people in early Christendom. *The Wonderfull Discoverie* describes a group of these people in Lancaster. A guide for killing these people is provided in the treatise *Malleus Maleficarum.* In Japan, these people are said to use foxes as familiars. Many of them are widowed or mentally ill women blamed for unexplained events. For 10 points, name these people accused of practicing black magic who were persecuted in early modern Europe.  
ANSWER: **witch** es [accept word forms such as **witchcraft** ; prompt on similar answers such as **djinn** ; prompt on answers describing a **practitioner** of **magic** until it is read]

5. The artist of this painting replicated its background to depict people with sickly green faces in a painting entitled *Anxiety.* In the background of this painting, two boats rest in a yellow lake. Its top half is dominated by a bright orange skyline, which may be credited to Krakatoa's eruption. In this painting, two people on a bridge walk away from a ghastly person whose hands are raised up to its head. For 10 points, name this painting of a distressed person uttering a sharp cry, by Edvard Munch.  
ANSWER: *The* ***Scream***

In what Flannery O'Connor short story are the Grandmother and her family murdered by the Misfit?  
ANSWER: "A **Good Man Is Hard to Find** "

This is a calculation question. If three fair dice are rolled, what is the probability of getting at least one 6 and at least one 1?  
ANSWER: **5/36** [or **30/216** ]