**VHSL Regionals 2016-2017 - Round 02 - First Period, Fifteen Tossups**



1. For any point P along the circumcircle of one of these figures, the points along the extension of this figure's sides that are closest to P lie along the Simpson line. Given one of these figures, there is always a circle through nine specific points on it. The area of this figure can be calculated using the semi-perimeter in a formula named for Hero of Alexandria, or it can be found by the product of one half base times height. For 10 points, name this figure that comes in acute, obtuse, and right varieties.   
ANSWER: **triangle**

2. In a speech about this future state, men like Andrew Butler were said to have raped "a virgin Territory." Weapons that were used in this future state were known as "Beecher's Bibles." Five farmers were killed in the Pottawatomie massacre in this territory by John Brown. This territory and its northern neighbor were created by an 1856 law that also allowed for popular sovereignty to decide slavery here. For 10 points, what future state was labeled "bleeding" due to fighting by pro and anti-slavery supporters?  
ANSWER: **Kansas** [or **Kansas** Territory]

3. An important tract for this belief system is *The Promise Key* by Leonard P. Howell. Its followers use the phrase "I and I" instead of the pronoun "I" and practice a vegetarian diet known as "I-tal." This system's followers reject "isms" and take the Lion of Judah as an important symbol. Adherents to this system reject worldly materialism, which they call "Babylon," and advocate the spiritual use of cannabis. For 10 points, name this belief system, founded in Jamaica, which reveres Ethiopia's ruler Haile (HAY-lee) Selassie.  
ANSWER: **Rasta**fari [or **Rasta**farianism]

4. This man was studying ophthalmology in London when he was recalled home after the death of his brother and heir apparent in a car accident. During a 2015 interview, this man joked that his air force did not use "cooking pots" or "barrel bombs." He succeeded his own father, Hafez, in 2000, and is the General Secretary of the Ba'ath (BATH) Party. Russia has supported this President in his incredibly bloody civil war, which has devastated cities like Aleppo. For 10 points, name this current President of Syria.  
ANSWER: Bashar al-**Assad**

5. A filmmaker from this country directed the experimental film *Man with a Movie Camera*. Science fiction films made in this country include the original versions of *Solaris* and *Stalker.* A film made in this country contains an infamous sequence showing broken spectacles and a baby carriage falling down steps as soldiers shoot into a crowd. That movie from this country features the Odessa steps massacre and is called *Battleship Potemkin*. For 10 points, Sergei (ser-GAY) Eisenstein was a director from what European country?  
ANSWER: **Soviet Union** [or **Russia**; or **USSR**; or **CCP**; or **SSSR**; or **Union of Soviet Socialist Republics**]

6. After this incident, the author L. Frank Baum called for "total extermination" of a certain group. This event took place at a location that was later occupied by the group AIM in 1973. A 1970 book's title proclaims "bury my heart" at the location of this event, which is found within a place named Pine Ridge. Prior to it, Yellow Bird performed a "Ghost Dance" and told others that they were bulletproof. For 10 points, what 1890 massacre in South Dakota killed hundreds of the Lakota people?  
ANSWER: **Wounded Knee** massacre

7. For many years, this team was owned by Tom Yawkey. Under the name "the Americans," it won the first ever World Series. While playing for this team, a man broke a record for most home runs hit by a designated hitter. Its win in the 2004 World Series marked the end of the so-called "Curse of the Bambino" that plagued this team. David Ortiz recently retired from this team, which has a major rivalry with the New York Yankees. For 10 points, name this Massachusetts-based baseball team.  
ANSWER: **Boston** Red Sox [or **Red Sox**; or **Americans** until it is read; prompt on Sox]

8. This phenomenon can be measured by a tipping bucket gauge. Shifts in the ITCZ primarily affect the amount of this phenomenon that an area receives. Because mountains force air masses to rise and cool, the land on the leeward side of a mountain is subject to a "shadow" named for this phenomenon. Sulfuric acid and nitric acid are the primary components of the "acid" form of this phenomenon. For 10 points, a lack of what type of precipitation is usually quoted as characterizing deserts?  
ANSWER: **rain** [prompt on precipitation]

9. The top producer of this crop once employed many slaves on plantations called *fazendas* to harvest it. An expensive type of this crop comes from the Blue Mountains of Jamaica. The French introduced this crop into Vietnam to compete with Brazilian production; Brazil and Vietnam are still the top two producers of this crop. The character Juan Valdez advertised Colombian growers of this crop. *Robusta* and *arabica* are the two main varieties of, for 10 points, what crop which can be brewed into a caffeinated beverage?  
ANSWER: **coffee** beans [or ***Coffea***]

10. In this novel, a man sarcastically observes that his lice have small red crosses on their heads because he picked them up at a hospital. This novel's protagonist and his friends are subject to brutal punishments during training under the former postman Himmelstoss (him-ull-SHTOSS). In this book, Albert is sent to a Catholic hospital after he receives a shrapnel wound, and Kat and Paul Baumer (BAO-mah) are among those eventually killed in World War I. For 10 points, name this novel by Erich Maria Remarque (AIR-ish muh-REE-uh reh-MARK).  
ANSWER: ***All Quiet on the Western Front*** [or ***Im Westen Nichts Neues***]

11. In a novel by this author, the protagonist's vegetarian wife travels to China to care for her seriously ill missionary sister. Claude Wheeler dies in World War I in this author's novel *One of Ours*. She wrote a novel in which Mr. Cutter is attacked by his own housesitter and in which Lena Lingard enjoys life as a dressmaker in the town of Black Hawk. Jim Burden narrates a novel by this author in which a Bohemian girl ends up as a farmer's wife with ten children. For 10 points, name this author of *My Antonia*.  
ANSWER: Willa **Cather**

12. During the 1960's, this country's President was Eamon de Valera, the founder of the party known as Fianna Fail. Another political party in this country has a name translated as "we ourselves" and is called Sinn Fein (FAIN). This modern-day country was where the Easter Rising took place during World War One. The Good Friday Agreement was between the United Kingdom and this country, in regards to a disputed region with capital at Belfast. For 10 points, what country shares an island with a portion of the U.K.?  
ANSWER: Republic of **Ireland** [or **Irish** Republic; do not accept "Northern Ireland"]

13. This place is found in the title of a bronze sculpture of a walking man exemplifying "unique forms of continuity in" it, and was made by Futurist artist Umberto Boccioni. In the 1920s, a set of sculptures named after this place was taxed by U.S. customs officials who did not recognize the sculptures as art. Those minimalist sculptures named after this place are shaped like elongated oval planes that represent movement during flight. For 10 points, what place names a set of Constantin Brancusi sculptures of "birds"?  
ANSWER: **space**

14. This author based the character of Charlie Citrine on himself in a novel about Citrine's relationship with a writer based on this man's friend, Delmore Schwartz. Another of his novels begins with the line "I am an American, Chicago born." That book by this author is a picaresque (pick-uh-RESK) look at the title character's free-wheeling life beginning during the Depression. For 10 points, name this American author of *Humboldt's Gift* and *The Adventures of Augie March*.  
ANSWER: Saul **Bellow** [or Solomon **Bellows**]

15. This mathematician names one-dimensional complex manifolds that can be used to study multivalued functions. An open problem named for him asks whether the real part of complex-valued solutions to his namesake zeta-function all have value one-half. Integrals are often introduced by approximating areas using this mathematician's namesake "sums." For 10 points, name this German mathematician who made a conjecture about the distribution of the prime numbers known as his namesake "hypothesis."   
ANSWER: Bernhard **Riemann**

**VHSL Regionals 2016-2017 - Round 02 - Directed Period**



1A. What longtime Senator was involved in the 1969 Chappaquiddick incident in which he left the scene of a fatal accident involving a female passenger?  
ANSWER: **T**ed **Kennedy** [or **E**dward **Kennedy**; prompt on Kennedy]

1B. What structure transmits electrical or chemical signals between two neurons that are separated by its namesake cleft?  
ANSWER: **synapse** [or **synaptic**]

2A. What word can refer to either an internet email provider or to a member of a race of bestial humans from *Gulliver's Travels*?  
ANSWER: **yahoo**

2B. What mountain is visible in *The Great Wave off Kanagawa*, the first in a series of "Thirty-six Views" of it made by Hokusai?   
ANSWER: Mount **Fuji** [or **Fuji-san**; or **Fuji-yama**]

3A. This is a 20-second calculation question. Find the real roots of the following polynomial: x to the fourth, minus two x cubed, plus two x squared, minus two x, plus one.  
ANSWER: x = **1** [since the coefficients add to zero, we know that x=1 is a solution; we can then use synthetic division to factor out x-1, twice, to leave x²+1=0, which has no additional solutions.]

3B. This is a 20-second calculation question. On her first three exams, Tasha earned an average of 88 with a median of 82. What was the new mean if her fourth exam score did not change the median?   
ANSWER: **86.5** [or **86 and a half**] [to not move the median, the fourth exam score was 82, so the mean is (3\*88+82)/4=86.5.]

4A. What suicidal American poet included "Tulips" and "Lady Lazarus" in her collection *Ariel*?  
ANSWER: Sylvia **Plath**

4B. What first commercial computer produced in the U.S. correctly predicted the winner of the 1952 presidential election?  
ANSWER: **UNIVAC** I [or **Universal Automatic** Computer]

5A. A phrase translating as "Storm and Drive" or "Storm and Stress" names a literary movement active in which country during the late 18th century?  
ANSWER: **Germany**

5B. What kind of animal is Montmorency, who accompanies the *Three Men in a Boat*, and Flush, the subject of a satirical biography by Virginia Woolf?  
ANSWER: **dog**

6A. What is the term for the rhythmic contractions that help move food down the esophagus?  
ANSWER: **peristalsis** [or **peristaltic** waves]

6B. In 1571, the Holy League defeated the Ottomans in what naval battle, preventing Ottoman expansion on the Mediterranean?  
ANSWER: Battle of **Lepanto**

7A. Aye-ayes ("eye"-"eyes") are a species of what primates native to Madagascar?  
ANSWER: **lemur**s

7B. What hero of the Napoleonic Wars later became British Prime Minister in 1828?  
ANSWER: Duke of **Wellington** [or Arthur **Wellesley**]

8A. This is a 30-second calculation question. Let f be the sinusoidal function with equation f of x equals five sine of x plus six cosine of x. What is the amplitude of f?  
ANSWER: square **root** of **61** [using the Sine Addition Formula, we can rewrite f(x) as sqrt(61)\*sin(x+arccos(5/sqrt61)).]

8B. This is a 30-second calculation question. What is the area of a circle, in simplest form and in terms of pi, if it has a square of area 20 inscribed in it?  
ANSWER: **10 pi** [The diagonal of the square is a diameter of the circle, and it has length sqrt(20)\*sqrt(2)=sqrt(40). The radius of the circle is sqrt(40)/2=sqrt(10), so its area is 10pi.]

9A. Within Zoroastrianism, Zoroaster (ZOAR-oh-ast-URR) is the chief prophet, but what deity of wisdom is its Supreme Being?  
ANSWER: **Ahura Mazda** [or **Ormuzd**]

9B. *Dachschund & Friends*, *Chihuahua & Friends*, and *Lab & Friends* are some of the entries in what series of pet simulation games played on handheld DS consoles?  
ANSWER: **Nintendogs**

10A. "Micro" and "Macro" are Greek examples of what smallest meaningful units of language?  
ANSWER: **morpheme**s

10B. What controversial President of the Philippines has endorsed the vigilante killing of drug users and criminals?  
ANSWER: Rodrigo "Rody" Roa **Duterte** [or **Digong**]

**VHSL Regionals 2016-2017 - Round 02 - Third Period, Fifteen Tossups**



1. This character becomes an alcoholic in the "Demon in a Bottle" storyline. After being severely injured, he was saved by the scientist Ho Yinsen. This character is friends with James Rhodes, who wears a costume similar to his and is known as War Machine. His villains include the Mandarin and corporate rival Obadiah Stane. In his first appearance, this character must wear a magnetic chest plate to prevent shrapnel from reaching his heart. For 10 points, what Marvel Comics character is the armored alter ego of Tony Stark?  
ANSWER: **Iron Man** [or **Anthony** until "Tony" is read; or **Tony** until it is read; or **Stark** until it is read]

2. James Bay is an extension of a bay named after this person, on which the city of Churchill, the so-called "Polar Bear Capital of the World," is located. A river named after this person begins at Lake Tear of the Clouds in the Adirondack Mountains. A large bay that borders Manitoba was where this explorer's crew mutinied in 1611. The Erie Canal connects to a river named after this explorer. For 10 points, identify this explorer who lends his name to the river that flows past Albany and New York City.  
ANSWER: Henry **Hudson**

3. This language uses a definite article that changes form from "ke" to "ka" based on the subsequent word. In this Marquesic (mar-KAY-sik) language, the "kahako" (kah-hah-KOH) symbol indicates long vowels, and the okina (OH-kee-nah) denotes a glottal stop. This is the only non-English language to enjoy official status in a U.S. state. It uses only eight consonants and five vowels in its orthography. For 10 points, name this Polynesian language spoken on an archipelago that comprises the 50th state.  
ANSWER: **Hawaiian** language [or **ʻŌlelo Hawaiʻi**]

4. During this battle, a future Cabinet member led a night assault with bayonets on Redoubt Number 10. Legendarily after this battle, Charles O'Hara presented a sword of surrender to Benjamin Lincoln and a band played "The World Turn'd Upside Down." Prior to this battle, the losing side had an escape by sea blocked when the French won the Battle of the Chesapeake. After this 1781 battle, Lord Cornwallis surrendered 8,000 troops to George Washington. For 10 points, name this last major land battle of the American Revolution.  
ANSWER: Battle of **Yorktown** [or Siege of **Little York**]

5. People at this location were afraid to be chalked with symbols that would send them to a public health hospital that opened in 1902. Angel Island in California is sometimes said to be the west coast's version of this place. A persistent myth says that many people who entered here had their names changed for ease of pronunciation. This location was known as the "Island of Tears" because people with contagious diseases would be sent back home. For 10 points, name this island in Upper New York Bay, once a major immigration station.  
ANSWER: **Ellis** Island Immigration Station

6. This religion is governed by the book *Manual of the Mother Church*, which established "Reading Rooms" that were open to the public. Its founder also established a newspaper that has won seven Pulitzer Prizes. This religion was founded by Mary Baker Eddy in the 1870's. A 1990 case featured adherents of this religion charged with manslaughter after their son's sickness was only treated with prayer. For 10 points, what branch of Christianity is best known for requiring members to avoid all medicine?  
ANSWER: **Christian Science** [or **Christian Scientist**s]

7. 5-alpha reductase converts this hormone into the more potent DHT, and aromatase (uh-RO-muh-taze) turns it into an 18-carbon diol (DYE-awl). This hormone and its precursors are produced by Leydig (LYE-dig) cells upon LH stimulation. The vas deferens and seminal vesicles develop in response to this androgen (AN-dro-jen), which is mimicked by anabolic steroids. For 10 points, name this male sex hormone named for being produced in the testes.  
ANSWER: **testosterone**

8. This author created Frederick Winterbourne, who is scandalized by a young American girl who contracts "Roman Fever" while visiting the Coliseum at night and dies. In another of his novellas, Miss Jessel, the lover of Peter Quint, used to take care of Flora. That novella by this author ends with an unnamed governess discovering that the young Miles has died, possibly because of a ghost. For 10 points, name this author of *Daisy Miller* and *The Turn of the Screw*.  
ANSWER: Henry **James**

9. The BCR-ABL1 fusion gene occurs in a form of this disease due to reciprocal translocation between chromosomes 9 and 22. That form of this disease produces the Philadelphia chromosome and is its "chronic myelogenous" (my-uh-"LODGE"-uh-nus) type. Its acute lymphoblastic type is most common in children and frequently manifests with fatigue and easy bruising. For 10 points, name this form of cancer that results in immature white blood cells and may be treated with a bone marrow transplant.  
ANSWER: **leukemia** [or chronic myelogenous **leukemia**; or acute lymphoblastic **leukemia**; or acute lymphocytic **leukemia**; or **CML**; or **ALL**]

10. This event was partially orchestrated by a group known as the Immortal Seven. The year after this event, the new government passed a Bill of Rights reestablishing the right of Protestants to bear arms. In the later Battle of the Boyne, the Jacobites attempted to restore the monarch supplanted by this event, in which a king was replaced by his daughter and her husband, a Dutch prince. For 10 points, what 1688 revolution featured James II overthrown as English king by William and Mary?  
ANSWER: **Glorious** Revolution [or **Bloodless** Revolution; or Revolution of **1688** until it is read]

11. A character created by this author was inspired by his friend Henry Irving, with whom he worked on the business operations of the Lyceum Theatre. A gem and a robe symbolize an Egyptian curse in a novel by this author whose protagonist is Malcolm Ross. This author of *The Jewel of Seven Stars* wrote a novel in which Lucy Westenra's death is blamed on supernatural occurrences by Abraham Van Helsing, and in which a count living in England is unmasked as a vampire from Transylvania. For 10 points, name this author of *Dracula*.  
ANSWER: Bram **Stoker**

12. Charge times velocity is crossed with this quantity to give force by the Lorentz force law. Heating a material past the Curie point will remove its ability to form this phenomenon. The line integral of this quantity around a loop is proportional to the current enclosed, by the Ampere's law. In general, an electric current will produce an electric field and this phenomenon, which is measured in Teslas. This phenomenon is symbolized B. For 10 points, using iron filings, one can see that what phenomenon is formed by lines that run from north poles to south poles?  
ANSWER: **magnetic field** [or **B**-field until it is read]

13. A myth about this person claims that Isaac Potts concluded that a man could be a soldier and a Christian after seeing this person earnestly praying in a wintry grove. Many stories about this man were spread by Parson Mason Weems in an 1800 best-selling book meant to instruct children. Legendarily, this man told his father "I can't tell a lie" and admitted using a hatchet to commit mischief. For 10 points, name this Revolutionary War hero who probably did not chop down a cherry tree as a youngster.  
ANSWER: George **Washington**

14. One of these things acts as a judge in Edwin Landseer's painting *Laying Down the Law*. These things are the most famous subjects of the artist Cassius Marcellus Coolidge. Another one of these living things is in the center of the very bottom of a painting depicting a couple, a portrait of the Arnolfinis made by Jan Van Eyck (IKE). In *A Waterloo*, many of these animals react in shock as one of their companions seems to scoop up all the chips. For 10 points, what animals are depicted playing poker in a series of legendarily goofy American paintings?  
ANSWER: **dog**s [or **canine**s; accept any specific type of dog]

15. A "short-day" mutant of this organism called Maryland Mammoth helped scientists discover photo-periodism. Martinus Beijerinck (BUY-er-ink) discovered viruses after doing experiments on this organism. A class of acetylcholine (uh-SEE-tul-KOHL-een) receptors is stimulated by a toxic substance named after the genus of this plant. A namesake pathogen infecting this organism was the first virus to be crystallized and causes a mosaic pattern on its leaves. For 10 points, name this plant from which nicotine is derived.  
ANSWER: **tobacco** [or ***Nicotiana*** *tabacum*]

**VHSL Regionals 2016-2017 - Round 02 - Tiebreaker Questions**



1. In a scene set in this country, a character asks "isn't it pretty to think so?" to a woman saying they could have had a good time together. That novel's final scene in this country features Jake Barnes talking to Lady Brett Ashley. In a novel, Robert Jordan is an American tasked with blowing up a bridge in this country during a civil war. Ernest Hemingway's *For Whom the Bell Tolls* is set in this country. For 10 points, to what European country do Americans travel in Hemingway's *The Sun Also Rises* to see the running of the bulls?  
ANSWER: **Spain** [or Kingdom of **Spain**; or **Spanish** Republic]

2. Bokmal is the more widely-used of the two standards of this country's official language. This country, which owns an island home to a vault with millions of seeds, trails only Russia in European oil production. The explorer who led the first expedition to reach the South Pole, Roald Amundsen, is from this country. Unlike other Nobel Prizes, the Nobel Peace Prize is awarded in this country's capital, not Stockholm. For 10 points, name this Scandinavian country whose capital is Oslo.  
ANSWER: **Norway** [or Kingdom of **Norway**; or Kongeriket **Norge**]

3. The President of this organization is effectively a former Prime Minister named Donald Tusk. Its Council of Ministers can be found in the Justus Lipsius building, and it was formally established by the Treaty of Maastricht (MAH-strict) in 1992. The Treaty of Lisbon gave members the legal right to leave this group. In 2016, the "Brexit" process involved the United Kingdom voting to leave this group. For 10 points, what group consists of 28 countries, including France and Italy?  
ANSWER: **European Union** [or **EU**; or **European Council**]

4. In humans, the level of this element in the blood is controlled by the renin–angiotensin system. MSG is so named because it contains one atom of this element. A percentage composition of potassium or calcium and a percentage composition of this element characterizes, respectively, the alkali and plagioclase feldspar series. This cation is found in halite. Baking soda consists of this element bound to a bicarbonate ion. For 10 points, what alkali metal has eight more protons than lithium and has chemical symbol Na?  
ANSWER: **sodium** [or **Na** until it is read]

5. Many details of this painting were reproduced by Eugène Delacroix (deh-luh-CWAH) in *The Massacre of Chios*. The artist of this painting prepared by visiting hospitals and bringing severed limbs to his studio. The bodies in this painting are arranged in two pyramids. Several people in this painting wave their clothes to get the attention of a faraway rescue ship. For 10 points, name this painting that shows sailors using the title vessel after a shipwreck, by Théodore Géricault (JAY-ree-coe).  
ANSWER: *The* ***Raft of the Medusa*** [or *Le* ***Radeau de la Méduse***]

How many different non-congruent, non-degenerate triangles are there with sides of length three and seven, when the third side length must be an integer?  
ANSWER: **5** [by the Triangle Inequality, the third side must be larger than 7-3=4 and smaller than 7+3=10. There are 5 integers that work, each corresponding to a unique triangle.]

What Roman emperor divided the empire into four quarters, each with its own ruler, and began the bloodiest persecution of Christians in the empire's history?  
ANSWER: **Diocletian** [or **Diocles**]