**VHSL Regular Season 2016-2017 - Round 08 - First Period, Fifteen Tossups**

1. A painter from this country used heavily diluted oil paint in her "soak stain" technique. That painter, Helen Frankenthaler, was part of the Color Field movement in this country, which also included Mark Rothko. This country's landscape is featured in many paintings of flowers and animal skulls by the wife of Alfred Stieglitz. For 10 points, name this country home to Georgia O'Keeffe and the Art Institute of Chicago.
ANSWER: **United States** of America [or **US**A]

2. After events in this city, Marine Le Pen complained "we are not at war…we are in a war of words." In this city, Prime Minister Manuel Valls was booed during a moment of silence. After events in this city, a nationwide state of emergency was extended for three months. A man drove a 19-ton cargo truck into a crowd celebrating Bastille Day here. For 10 points, what French city on the Mediterranean was the target of a July 2016 terrorist attack?
ANSWER: **Nice** [NEECE]

3. In this novel, the protagonist's second husband forces her to bind up her hair in the presence of other men. After marrying Logan Killicks, this novel's protagonist marries the man who becomes mayor of Eatonville, Jody Starks. After surviving a hurricane, this novel's protagonist is forced to shoot her rabid lover Tea Cake. For 10 points, name this novel about Janie Crawford written by Zora Neale Hurston.
ANSWER: ***Their Eyes Were Watching God***

4. In a March 2015 game against the Spurs, this player scored a franchise high 57 points including an overtime-forcing 3 pointer. After playing just 11 games for Duke, he was selected first in the 2011 draft. This man was sidelined for much of the 2015 Finals after breaking his kneecap in Game One. However, in the final minute of Game 7 of the 2016 Finals he hit a three to put his team up against the Warriors. For 10 points, name this Cleveland Cavaliers point guard
ANSWER: Kyrie **Irving** [prompt on Kyrie]

5. This dynasty's first ruler won the massive naval battle of Lake Poyang. It employed the brilliant naval explorer Zheng (ZENG) He (HAY), and under its Yongle (YONG-lay) Emperor, the Forbidden City in Beijing was constructed. After this dynasty was supplanted by the Shun dynasty, China soon fell under the control of the Manchus. For 10 points, what Chinese dynasty reigned from 1368 to 1644 and was noted for its porcelain?
ANSWER: **Ming** Dynasty [or Empire of the Great **Ming**]

6. This city's residents received candy in Operation Little Vittles, and its mayor was once Social Democratic leader Willy Brandt. In 1949, almost 9,000 tons of supplies a day were airlifted to this city to break a blockade. After World War II, this city was divided into four sectors. Checkpoint Charlie became a crossing point separating the western and eastern portions of this city. For 10 points, what German city was divided for decades by a namesake wall?
ANSWER: **Berlin** [or **East Berlin**; or **West Berlin**]

7. A photograph from this historical period, *Bud Fields and his Family*, was taken by Walker Evans and is found in *Let Us Now Praise Famous Men*. Two children rest their head on Florence Owens Thompson's shoulder in *Migrant Mother*, another photograph from this era. For 10 points, name this period in American history during which the Farm Security Administration employed photographer Dorothea Lange.
ANSWER: **Great Depression** [prompt on Dust Bowl; prompt on 1930s]

8. An economist born in this country argued that food shortages should not occur in democratic states, which he based on his personal experiences in a 1943 famine in this country. Companies headquartered in this country include Zee Entertainment Enterprises and Tata Motors, and it possesses the second-largest labor force in the world. For 10 points, name this birthplace of Amartya (UH-mart-EE-yah) Sen, which is the location of the Bombay Stock Exchange.
ANSWER: **India**

9. The title character of this short story travels with his dog Wolf and drinks the moonshine of a bunch of bearded men who might be ghosts that he sees playing nine-pins. When the title character of this story returns home from the Catskills, he finds he has missed the American Revolution. For 10 points, name this story by Washington Irving about a man who sleeps for nine years.
ANSWER: "**Rip Van Winkle**"

10. Richard Halliburton disappeared while crossing this body of water to get to a World's Fair. To test theories about the settlement of this body of water's islands, Thor Heyerdahl (HIGH-err-dall) sailed across it on the raft *Kon-Tiki*. The Pitcairn Islands in this body of water were settled by participants in the "Mutiny on the *Bounty*." Amelia Earhart (AIR-hart) disappeared while flying over, for 10 points, what large ocean between the Americas and Asia?
ANSWER: **Pacific** Ocean

11. This organ secretes a hormone initiating conversion of angiotensionogen (an-jee-oh-ten-SIN-uh-jen) into angiotensin. Fluid forced into Bowman's capsule in this organ becomes hyperosmolar ("hyper"-oz-MOHL-ur) as it passes through the descending loop of Henle (HEN-lee), which forms part of its nephrons (NEF-rons). This organ's renal pelvis is connected to a ureter (YUR-uh-ter). For 10 points, name this paired organ that filters urine.
ANSWER: **kidney**s

12. This man was incorrectly believed to have lost power during the Day of the Dupes. He personally commanded troops attacking Protestants at the siege of La Rochelle (ro-SHELL). In 1635, this man established the institution known as the French Academy. He was known as the "Red Eminence" and was succeeded as adviser by his protégé, Jules Raymond Mazarin. For 10 points, what French cardinal was a powerful minister for Louis XIII?
ANSWER: Cardinal **Richelieu** [or Armand Jean **du Plessis**]

13. These structures are responsible for the higher boiling points of alcohols, as compared to alkanes, as well as of ammonia as compared to phosphine. Complementary base pairs in a DNA double helix are held together by these interactions. These interactions occur when their namesake element is bound to electronegative elements such as chlorine and oxygen. For 10 points, what strong intermolecular forces occur in water, causing it to expand when frozen?
ANSWER: **hydrogen bonds** [prompt on bonds]

14. This man killed the bandit Sinis by flinging him between pine trees while travelling from Troezen. This man abandoned a princess on the island of Naxos after she gave him a spool of thread. King Aegeus (ay-GEE-uss), this man's father, killed himself after he forgot to change the color of his sails. This one-time lover of Ariadne entered the Labyrinth to defeat a half-bull and half-human creature. For 10 points, name this hero who defeated the Minotaur.
ANSWER: **Theseus**

15. A parametric representation of this shape is *x* equals cosine *t* and *y* equals sine *t*. Cyclic quadrilaterals are those that can be inscribed in this shape. In the Cartesian plane, an example of this shape centered at the origin has the equation *x* squared plus *y* squared equals some constant. Given a fixed perimeter, this two-dimensional shape encloses the most area. For 10 points, what shape consists of all points equidistant from a given center, which defines their radius?
ANSWER: **circle**s

 **VHSL Regular Season 2016-2017 - Round 08 - Directed Period**

1A. Russia, Austria, and Prussia made three different partitions of what modern-day European country in the 18th century?
ANSWER: **Poland** [or Republic of **Poland**; or the Republic of **Lithuania**]

1B. What type of number is equal to the sum of its factors, excluding itself?
ANSWER: **perfect** number

2A. For the second year in a row, what Minnesota Timberwolves player, and former UCLA Bruin, won the NBA Slam Dunk Contest?
ANSWER: Zach **Lavine**

2B. What novelist wrote *Humboldt's Gift*, *Ravelstein*, and *The Adventures of Augie March*?
ANSWER: Saul **Bellow**

3A. This is a 20-second calculation question. Consider the following list of numbers: one, one, two, three, five. What is the product of the median, the mode, and the range?
ANSWER: **8**

3B. This is a 20-second calculation question. Which of the six trigonometric functions is equivalent to the expression cotangent of theta divided by cosecant of theta?
ANSWER: **cosine** of theta

4A. In music theory, what term derived from Greek describes multiple contrasting melodies that are played simultaneously?
ANSWER: **polyphony**

4B. In French and Spanish, what verb mood denotes hypothetical actions that may or may not occur?
ANSWER: **subjunctive** mood [or *modo* ***subjuntivo***; or *mode* ***subjonctif***]

5A. What 1815 victory for Andrew Jackson over the British actually took place after the treaty ending the War of 1812 had been signed?
ANSWER: Battle of **New Orleans**

5B. What Japanese novelist wrote about Shimamura's (SHEE-muh-MOO-ruhs) affair with a geisha in *Snow Country*?
ANSWER: Yasunari **Kawabata**

6A. What property of a system is preserved by transformations of charge and time and implies the existence of a conservation law, according to Noether's (NOY-thur's) theorem?
ANSWER: **symmetry**

6B. In 1975, who became the king of Spain and moved the country to a more democratic style of government before stepping down in 2014?
ANSWER: **Juan Carlos** I

7A. What word, from the Greek for "injurious speech," is the act of not treating a sacred concept with the appropriate respect?
ANSWER: **blasphemy** [or **blasphemous**]

7B. First Timothy, Chapter Two, Verses 11-15 are held by some to form a Biblical opposition to what practice that was first implemented in the Episcopal church in 2006?
ANSWER: **Ordination of Women** [or any equivalents of having **female clergy**]

8A. This is a 30-second calculation question. What are the solutions to the equation x to the fourth minus sixteen equals zero?
ANSWER: x = **2i**, x = **-2i**, x = **2**, x = **-2**, [or x = **plus or minus 2i**, x = **plus/minus 2**]

8B. This is a 30-second calculation question. A and B are vertices of a regular polygon, D is the midpoint of AB, and C is the center of the polygon. If the measure of angle ACD is 36 degrees, how many sides does the polygon have?
ANSWER: **5**

9A. In what Indian epic does the title character rescue his wife Sita (SEE-tuh) from the demon Ravana (rah-VAH-nuh)?
ANSWER: the ***Ramayana*** (rah-mah-YAH-nuh)

9B. What paralysis-causing disease is now very rare due to vaccines first developed by Jonas Salk and Albert Sabin?
ANSWER: **polio**myelitis

10A. What lake shared by Uganda and Kenya did John Hanning Speke (SPEAK) determine to be the source of the Nile River?
ANSWER: Lake **Victoria**

10B. What former Speaker of the House was sentenced in 2016 to fifteen months in prison after admitting he sexually abused boys?
ANSWER: Dennis **Hastert** [or John Dennis **Hastert**; or Denny **Hastert**]

 **VHSL Regular Season 2016-2017 - Round 08 - Third Period, Fifteen Tossups**

1. The fact that position and momentum lack this property is what results in the uncertainty principle. In the general case, matrix multiplication notably lacks this property. Addition has both associativity and this property, which is not possessed by either subtraction or division. For 10 points, name this property that, for multiplication, states that *a* times *b* equals *b* times *a*.
ANSWER: **commutativity** [or **commutative**]

2. Crater-like landforms called *makhtesh* are common in the southern half of this country. The Law of Return grants automatic citizenship to those undergoing *aliyah* by moving to this country. The port of Eilat (AY-laht) lies on this country's small southern coastline on the Gulf of Aqaba. This country, home to many villages called *kibbutzim*, employs the Iron Dome missile defense system against rockets from Gaza. For 10 points, name this Jewish state in the Middle East.
ANSWER: **Israel** [or State of **Israel**; or Medinat **Yisrael**]

3. During this battle, a rifleman killed Simon Fraser, kicking off a disorganized retreat by the losing side. It is frequently divided into separate engagements at Freeman's Farm and Bemis Heights. Benedict Arnold's seniority was restored for his valor at this battle, in which Horatio Gates forced John Burgoyne's British troops to surrender. For 10 points, name this 1777 battle in upstate New York frequently said to be the turning point of the American Revolution.
ANSWER: Battle of **Saratoga** [or Battle of **Freeman's Farm** until it is read; or Battle of **Bemis Heights** until it is read]

4. Planck's constant divided by this quantity defines a particle's de Broglie (duh BROY) wavelength. The complementary variable to this quantity in quantum mechanics is position. The time integral of force is equal to the change in this quantity, which is known as the impulse. It is conserved in both elastic and inelastic collisions. For 10 points, name this quantity defined as mass times velocity.
ANSWER: linear **momentum** [or **p**; or translational **momentum**; do not accept "angular momentum"]

5. This man's attempt to win consecutive presidential nominations was foiled when Bourbon Democrats nominated Alton Parker. He resigned as Secretary of State shortly after the sinking of the *Lusitania*. This man served as a special prosecutor during the Scopes "monkey trial." In 1896, this man proclaimed that "you shall not crucify mankind upon a cross of gold." For 10 points, what three-time presidential nominee promoted the Free Silver cause?
ANSWER: William Jennings **Bryan**

6. In this novel, William Dobbin marries one of the protagonists after surviving the Battle of Waterloo, at which George Osborne is killed. This novel takes its title from a sinful town in *The Pilgrim's Progress.* This novel follows two graduates of Miss Pinkerton's school for girls, Amelia Sedley and the scheming Becky Sharp. For 10 points, name this novel by William Makepeace Thackeray.
ANSWER: ***Vanity Fair***

7. This force is independent of area according to Amonton's Second Law, and can generate electric charge through the triboelectric effect. Because of this force, a graph of acceleration will be zero until it pops up when the static form of this force is overcome. This force equals the magnitude of the normal force times the coefficients of its static or kinetic forms. For 10 points, name this force that opposes motion and occurs when two objects are rubbed against each other.
ANSWER: **friction**

8. The color of caesium and this element is due to relativistic effects. A mixture that dissolves this noble metal will create chloroauric acid. This element is alloyed with the element below it on the periodic table in electrum. Niels Bohr used a mixture of one part nitric acid to three parts hydrochloric acid to dissolve this element, in the form of Nobel medals belonging to Jewish scientists. For 10 points, what precious metal's chemical symbol is Au?
ANSWER: **gold** [or **Au** until it is read]

9. Theravada followers in this status obey the code of Patimokkha. These people, who comprise the "bhikku" population, wear a "tricivara" that is either ochre or saffron-colored. Some people in this status developed a flamboyant martial art at Shaolin. At times, up to a quarter of the population of Tibet belonged to this status. For 10 points, name this kind of Buddhist who becomes celibate and lives communally in a religious institution.
ANSWER: Buddhist **monk**s [or **nun**s; or **monastic**ism; or **bhikku**ni until "bhikku" is read]

10. This non-Sinatra artist asks "Baby won't you come my way? / got something I want to say" on his song "My Way." He ponders, "I'm like yeah she's fine / wonder when she'll be mine" on his song "679." He belongs to the Remy Boyz 1738 collective. His best-known song repeats "I can ride with my baby / I be in the kitchen cookin' pies with my baby." For 10 points, name this artist, who asked "'Hey, what's up, hello?'" on his song "Trap Queen."
ANSWER: **Fetty** Wap [or Willie **Maxwell** II]

11. Researchers have alleged that this country has killed tens of thousands of religious dissenters for organ harvesting purposes. A thinker from this modern day country preached on the importance of rectifying names to ensure proper social relationships. This country has cracked down on practitioners of Falun Gong. Ancient rulers of this modern day country claimed to have the Mandate of Heaven. For 10 points, what country was home to the philosopher Confucius?
ANSWER: **China** [or People's Republic of **China**; or **PRC**]

12. The youngest man to hold this position died in a 1961 plane crash over what is now Zambia while trying to investigate a crisis in the African state of Katanga. This position has been held by both Kurt Waldheim and Sweden's Dag Hammarskjold (HAHM-er-SCOLD), and any members of the Security Council can veto potential nominees. For 10 points, people in what position lead an international organization including 193 countries?
ANSWER: **Secretary-General** of the **United Nations** [or **UNSG**; or **Secretary-General** of the **UN**; prompt on Secretary-General]

13. This artist depicted a man leaning back in a chair in his *Office in a Small City*. Another of this artist's paintings shows a woman in a pink dress staring out of a window. This painter of *Morning Sun* depicted two women facing each other in a restaurant in *Chop Suey* and another of his paintings shows an advertisement for five cent Phillies cigars above a diner with no visible door. For 10 points, name this American artist of *Nighthawks*.
ANSWER: Edward **Hopper**

14. An etiquette handbook written in this language argued that studied effortlessness was necessary to the mannerisms of the title type of person. This language used to write *The Book of the Courtier* was also used by a poet who wrote love sonnets in a form he developed to a woman named Laura. For 10 points, name this language used by Baldassare Castiglione ("ball"-duh-SAR-ay kah-STEEL-ee-oh-nee) and Petrarch (PEH-trark).
ANSWER: **Italian**

15. This poet described the "liquefaction" of the title garments in his poem "Upon Julia's Clothes." Another poem by this man warns "that age is best which is the first, when youth and blood are warmer." His collection *Hesperides* (HESS-pear-UH-dees) includes a poem beginning with the line "Gather ye rosebuds while ye may." For 10 points, name this English poet who wrote "To the Virgins, to Make Much of Time."
ANSWER: Robert **Herrick**

 **VHSL Regular Season 2016-2017 - Round 08 - Tiebreaker Questions**

1. A sudden shift from a 54 to 43 degree angle characterizes the transitional "bent" example of these structures, one of three commissioned by Sneferu. These structures served the same purpose as the earlier flat-roofed *mastabas.* Imhotep built a "step" one of these buildings for Djoser (JOH-ser). The only surviving wonder of the ancient world is a building of this type for Khufu, located in Giza. For 10 points, name these tombs built for Egyptian pharaohs.
ANSWER: **pyramid**s

2. This astronomer's *Rudolphine Tables*, a star catalog and planetary table compendium, was accurate enough to predict the transit of Mercury four years after its publication. A result developed by this scientist states that the square of the orbit of a planet is proportional to the cube of its semi-major axis. He developed a law stating that the orbit of every planet is an ellipse. For 10 points, what German astronomer proposed three laws of planetary motion?
ANSWER: Johannes **Kepler**

3. After this event, Governor Thomas Hutchinson reluctantly moved soldiers to Castle Island. A local silversmith made an inaccurate engraving depicting this event as a deliberate attack on helpless crowds. It resulted in the death of a dock worker named Crispus Attucks (AHH-tucks). Six of this incident's perpetrators were acquitted after a defense by John Adams. For 10 points, name this March 1770 incident in which British soldiers killed five civilians in Massachusetts.
ANSWER: **Boston Massacre** [or the Incident on **King Street**]

4. Over half of the world's lithium reserves are found below this country's Salar de Uyuni (OOH-yoo-NEE). This country's town of Potosí provided much of Spain's colonial silver. This country's cultivation of coca is promoted by its current president, Evo Morales. This country shares Lake Titicaca with its northwestern neighbor Peru. For 10 points, name this South American country with two capitals, La Paz and Sucre.
ANSWER: **Bolivia** [or Plurinational State of **Bolivia**; or Estado Plurinacional de **Bolivia**]

5. In a novel by this author, Edward Ferrars is disowned for refusing to break off his engagement to Lucy Steele. This creator of Marianne and Elinor Dashwood also wrote about the owner of Pemberley, a friend of Mr. Bingley who slights but later falls in love with Elizabeth Bennet. For 10 points, name this English novelist of *Sense and Sensibility* and *Pride and Prejudice.*
ANSWER: Jane **Austen**

If f of x equals the square root of the quantity x minus three, and g of x equals the square root of the quantity three minus x, what are all points in both the domain of f of x and the domain of g of x?
ANSWER: x = **3**

According to Jewish folklore, Rabbi Judah Loew of Prague brought to life what monster made of clay?
ANSWER: **golem**