



VHSL Scholastic Bowl  
Regional Tournament 2015  
Round 2  
First Period, Fifteen Tossups

1. He's not a tsar, but this man helped draw up the Troppau (TROH-pow) protocol in response to unrest in Naples. This person announced one of his policies after August von Kotzebue (COT-suh-byoo) was murdered by Karl Sand. This politician cracked down on the Burschenschaften (BOOR-shun-shahf-tun) fraternities with the Carlsbad decrees. This man met with Castlereagh (CAS-ul-ray) and Talleyrand to establish the "Concert of Europe." For 10 points, name this Austrian foreign minister who headed the 1815 Congress of Vienna.

ANSWER: Klemens von Metternich [Klement Wenceslas Lothar von Metternich-Winneburg-Beilstein]

2. A polar equation setting  $r$  equal to this function of  $\theta$  gives Archimedes's Spiral. When this function is applied to an integrand, the resulting integral equals this function of the original integral. This operation, swapping rows, and replacing rows are the three elementary row operations. This function applied to  $\log x$  is equivalent to taking the logarithm of  $x$  to a given power. The graph of this function of  $x$  is a straight line through the origin. For 10 points, name this basic function whose inverse is division by a constant.

ANSWER: multiplication by a constant [or scalar multiplication; or multiplication by  $c$ ; or  $r$  equals  $a \theta$ ; or  $y$  equals  $a x$ ; or  $r$  equals  $c \theta$ ; or  $y$  equals  $c x$ ; or obvious equivalents; do not accept "matrix multiplication"]

3. A religious movement which was founded in this country was first practiced by Wodziwob (WOD-zee-wob), popularized by Wovoka (wuh-VOH-kuh), and claimed that its garments could repel bullets. Another religion from this country grew out of the Bible Student movement and publishes *Awake!* This country is home to a religion which claims that "another testament of Jesus Christ" was read in Reformed Egyptian from golden plates by Joseph Smith. For 10 points, the Ghost Dance, Jehovah's Witnesses, and Mormons were founded in what country?

ANSWER: United States of America [or USA; or America]

4. In 1997, Albanians rioted in the city of Vlora (vuh-LORE-uh) following the failure of several of these plans. Clarence Barron pointed out inconsistencies in one of these plans, which involved the creation of the Securities Exchange Company in Boston. A more recent one of these plans, which caused several Jewish organizations to lose money, was perpetrated by Bernie Madoff. For 10 points, name these unsustainable plans which promise investment returns for participants based on the funds of future investors, which are sometimes named for Charles Ponzi.

ANSWER: pyramid schemes [or Ponzi schemes until "Ponzi" is read]

5. Antero Rubin won a victory during this war over Joseph Wheeler at the battle of Las Guasimas (gwah-SEE-muss). The policy of “reconcentration” employed by Valeriano Weyler helped lead to this conflict, during which the winning side was urged by “yellow journalists” to “remember the *Maine*.” The Rough Riders helped win the Battle of San Juan Hill during this war. For 10 points, name this military conflict, which ended with the 1898 Treaty of Paris and granted the United States control over the Philippines and Cuba.

ANSWER: **Spanish-American** War

6. The closed-form solution for the  $n$ th term in this sequence is known as Binet’s formula. After the first four or so terms, every other number in this sequence is the largest number in a Pythagorean triple. The ratio of terms in this sequence approaches the golden ratio as the terms tend to infinity. This sequence was developed in the book *Liber Abaci* (LEE-bair uh-BAH-chee) by considering a growing rabbit population. Each term in this sequence is the sum of the previous two terms. For 10 points, name this sequence that begins “1, 1, 2, 3, 5.”

ANSWER: **Fibonacci** sequence [or **Fibonacci** numbers]

7. Operation Musketeer targeted this kind of structure. Emperor Wen of Sui (SWEE) ordered the construction of a “Grand” one of these structures. Ferdinand de Lesseps oversaw the creation of one of them. The construction of one of these things was allowed by the Hay-Bunau-Varilla (boo-NOW-vuh-REE-yuh) Treaty; that one of these things was eventually returned to Omar Torrijos (tore-EE-hohs). During a 1956 crisis, one of these structures was nationalized by Gamal Nasser. For 10 points, name this type of waterway such as the Suez and the Panama.

ANSWER: **canals**

8. This poem describes “the world, which seems to lie before us like a land of dreams” before asserting that it “hath really neither joy, nor love, nor light.” This poem describes the “eternal note of sadness” heard by Sophocles (SAH-fuh-cleez) on the Aegean (uh-JEE-un), and it concludes with the image of a “darkling plain where ignorant armies clash by night.” For 10 points, name this poem set at the seaside, written by Matthew Arnold.

ANSWER: “**Dover Beach**”

9. South Korean researcher Hwang (WONG) Woo-Suk fabricated data suggesting that he performed this process. Meiosis (my-OH-sis) is absent from a type of reproduction similar to this process, called apomixis (ey-poh-MIX-is). The start of this process includes nuclear transfer of a somatic cell to an enucleated (eh-NOO-clee-ate-ed) oocyte (OH-uh-site) followed by an electrical shock. In 1996, a research team performed this process to create the sheep Dolly. For 10 points, name this process in which genetic information is used to create an identical organism.

ANSWER: **cloning** [or word forms]

10. Butes (BYOO-tayz) was nearly killed by these beings, but was saved by the intervention of Aphrodite. According to the *Metamorphoses*, Demeter created these beings to help look for Persephone (per-SEF-uh-nee). Orpheus saved the crew of the *Argo* from these beings. The captain who defeated them was tied to the mast of his ship, and ordered his men to plug their ears with wax. Odysseus ended their practice of making sailors crash against sharp rocks. For 10 points, name these part-bird women who allured men with their songs.

ANSWER: **Sirens**

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**This is page 2 of 11 total pages in this round.**

**This is Round 2 of 8 total rounds in the VHSL Regional Tournament 2015 question set.**

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11. This mathematician included proofs of the quadratic reciprocity theorem and the Fundamental Theorem of Algebra in his *Disquisitiones Arithmeticae* (DIS-kwiz-it-ee-OH-nayz ah-rith-MEH-tik-eye). He was the first to construct a regular seventeen-sided polygon using only a compass and straightedge. Independently of Legendre (luh-JON-druh), he developed least-squares regression to compute the orbit of the asteroid Ceres (SEER-eez). For 10 points, identify this German mathematician who sometimes lends his name to the normal distribution.

ANSWER: Carl **Gauss** [Carl Friedrich **Gauss**; or Johann Friedrich Carl **Gauss**]

12. This NFL team was the first-ever team with a losing record to win a game in the playoffs. After a recent playoff win, a defensive player for this team flamboyantly called out opposing receiver Michael Crabtree. It has retired the number 12 in honor of its fabled “12th Man,” its fans. This team won a playoff game thanks to a run from star player Marshawn Lynch that inspired the “Beast Mode” meme. For 10 points, name this Pete Carroll-coached NFL team that defeated the Denver Broncos in the Super Bowl played in 2014.

ANSWER: **Seattle** Seahawks [or **Seahawks**]

13. The protagonist of this novel notices that a particular word in James Joyce’s *Finnegans Wake* is one hundred letters long. In this novel, the upstanding Buddy Willard slowly recovers from his tuberculosis. This novel’s narrator tries losing her virginity to a U.N. interpreter, but fails to do so until she encounters a professor on an excursion from her mental hospital, where she has been admitted for attempting to commit suicide. For 10 points, name this novel about Esther Greenwood by Sylvia Plath.

ANSWER: *The* **Bell Jar**

14. This island’s Lake Akan (AH-kahn) is home to large green algae balls known as marimo (MAH-ree-moh). The indigenous population of this island tells stories known as Yukar (YOO-car) and keeps long wavy beards. Its largest city hosts the annual Snow Festival. This island lies north of the Tsugaru (soo-GAH-roo) Strait and is connected to its southern neighbor by the Seikan (SAY-con) Rail Tunnel. For 10 points, Sapporo (suh-PORE-oh) is the capital of what home to the Ainu (EYE-noo) people, the northernmost of Japan’s four main islands?

ANSWER: **Hokkaido**

15. The prelude of the *William Tell Overture* begins in E major with a solo for this instrument. Dvorak (duh-VOR-jack) quoted his song “Cypresses” in his B minor concerto for this instrument. One of these instruments, the Duport, was played by Mstislav Rostropovich (MEES-tuh-slahv ruh-STROP-oh-vitch). This instrument joins a piano and a violin in a piano trio. J.S. Bach composed six solo suites for this instrument, which is the lowest-pitched member of a string quartet. For 10 points, name this large string instrument played by Yo-Yo Ma.

ANSWER: **cello** [or **violoncello**; do not prompt on “violin”]



VHSL Scholastic Bowl  
Regional Tournament 2014  
Round 2  
Directed Round

1A. What French novelist wrote about Etienne Lantier (EH-tee-ehn LOHN-tee-ey) leading a miners' strike in *Germinal* (jair-mee-NAHL)?

ANSWER: Emile **Zola**

1B. Given a secant line and a circle, what term denotes the segment of the secant line whose endpoints are on the circumference of the circle?

ANSWER: **chord**

2A. What is the English name for the animal known by the Latin word "pullum" (POO-loom), by the French word "poulet" (poo-LAY), and as "pollo" (POH-yo) in Spanish?

ANSWER: **chicken**

2B. Zeno Cosini from *Zeno's Conscience* and Pi Patel from *Life of Pi* are examples of narrators with which characteristic quality that undermines their credibility?

ANSWER: **unreliability** [or **unreliable** narrators]

3A. This is a 20-second calculation question. What is the fortieth term of the arithmetic sequence whose first term is 1, second term is 5, and third term is 9?

ANSWER: **157**

3B. This is a 20-second calculation question. Out of twelve draws, with replacement, from a standard deck, a heart is observed on five. What is the difference between the experimental and theoretical probability of drawing a heart?

ANSWER: **1/6** [or **2/12**]

4A. What English king, who secured the French throne through the Treaty of Troyes (TWAH), used longbows to win the Battle of Agincourt (AH-jin-core)?

ANSWER: **Henry V** [prompt on **Henry**]

4B. Jesus told a parable about what character who departs with his father's inheritance, only to squander the money and return to his father, begging for forgiveness?

ANSWER: the **Prodigal Son** [or the **Lost Son**]

5A. Give the term for organisms such as mosses and lichen (LIKE-en) that are the first to colonize a previously-disturbed ecosystem and thereby initiate ecological succession.

ANSWER: **pioneer** species

5B. What performer of “Try” and “Blow Me One Last Kiss” sang “I’m still a rock star, I got my rock moves” in her song “So What?”

ANSWER: **Pink** [or Alecia **Moore**]

6A. What product of incomplete combustion consists of a carbon-oxygen triple bond and competitively inhibits oxygen binding to hemoglobin?

ANSWER: **carbon monoxide** [or **CO**; do not accept “carbon dioxide” or “CO<sub>2</sub>”]

6B. What river forms much of the border between Washington and Oregon?

ANSWER: **Columbia** River

7A. What Mannerist sculptor depicted Poseidon and his wife Amphitrite (am-fit-RAI-tee) in a salt cellar made for Francis I, and created the bronze sculpture *Perseus with the Head of Medusa*?

ANSWER: Benvenuto **Cellini**

7B. Name the first female CEO of General Motors, who has handled the company’s public response to a 2014 recall controversy.

ANSWER: Mary **Barra** [Mary Teresa **Barra**]

8A. This is a 30-second calculation question. Dwight and Angela are on exactly opposite sides of a hill 30 meters high. From Dwight’s position, the hill makes a 37 degree angle with the ground. From Angela’s position, the hill makes a 42 degree angle with the ground. Given that the sine of 37 degrees is roughly 3/5 and the sine of 42 degrees is roughly 2/3, then, to the nearest meter, how many meters must Dwight walk to make it over the hill to Angela’s position?

ANSWER: **95** meters

8B. This is a 30-second calculation question. An original rectangle has a width of 3 units and an unknown length. One new rectangle is created by decreasing the length and width of the rectangle by one unit each. A second new rectangle of equal perimeter and equal area is created by decreasing only the length of the original rectangle. What is the length of the original rectangle?

ANSWER: **4** units

9A. What World War I British poet wrote “Anthem for Doomed Youth” and “Dulce (DOOL-kay) et Decorum Est?”

ANSWER: Wilfred **Owen**

9B. What American author detailed the life of a former high school basketball star in a series of novels beginning with *Rabbit, Run*?

ANSWER: John **Updike**

10A. John Capodistrias (CAH-poh-DIS-tree-uss) and the admiral Miaoulis (MEE-uh-OO-liss) were among the founding fathers of what modern European state, which won independence from the Ottoman Empire in 1832?

ANSWER: **Greece** [or **Hellas**; or the **Hellenic Republic**]

10B. What war, which was part of the War of the Austrian Succession, was named for a ship captain's severed body part?

ANSWER: War of Jenkins's Ear



VHSL Scholastic Bowl  
Regional Tournament 2014  
Round 2  
Third Period, Fifteen Tossups

1. In a BCC crystal, each side length of the crystal equals four over root three times this quantity. van der Waals (VAN dur walz) names a scale for measuring this quantity according to the hard sphere model. Because f electrons shield poorly, this quantity's decrease is greater than expected across the lanthanides (LAN-thun-idez). Normally, this quantity increases down and to the left on the periodic table, the opposite trend from electronegativity. For 10 points, name this quantity measured in angstroms, which is the average distance from the nucleus to the electron cloud.

ANSWER: atomic **radius** [or ionic **radius**; or covalent **radius**; or van der Waals **radius**]

2. An aria by this composer notes that women often change the tone of their voices and their thoughts. During a party in one of his operas, the drinking song "Libiamo ne' lieti calici" (LEE-bee-ah-moh nay lee-ET-ee kuh-LEE-chee) is sung by Alfredo and Violetta. He wrote an opera in which the Duke of Mantua notes that "woman is fickle" in "La donna e mobile" (LAH don-eye MOH-bee-lay). In his opera set in Egypt, Radames (RAH-duh-mayz) is buried alive with the title Ethiopian princess. For 10 points, name this composer of *Rigoletto*, *La Traviata*, and *Aida*.

ANSWER: Giuseppe **Verdi** [Giuseppe Fortunino Francesco **Verdi**]

3. The spurious extended version of this play known as the "B-text" includes a scene in which the title character performs a trick involving the removal of his fake head. The title character of this play asks, "Was this the face that launched a thousand ships?" upon summoning Helen of Troy. For 10 points, name this play about a scholar who sells his soul to Mephistophilis (meh-fih-STAH-fuh-leez), written by Christopher Marlowe.

ANSWER: **Doctor Faustus** [or *The Tragical History of Doctor Faustus*; do not accept "Doctor Faust" or "Faust"]

4. This actor plays a Navy SEAL assigned to babysit five children in the 2005 film *The Pacifier*. A character played by this actor battles Owen Shaw in an attempt to save his girlfriend Letty in the 2013 installment of a long-running film series. He portrays a Furyan ("fury"-an) warrior who battles the Necromongers in *The Chronicles of Riddick*. The actor voiced the Iron Giant and also provided the voice of Groot in *Guardians of the Galaxy*. For 10 points, name this actor, who portrays Dominic Toretto in the *Fast and the Furious* series of films.

ANSWER: Vin **Diesel** [or Mark **Sinclair**; or Mark Sinclair **Vincent**]

5. Time dilation was confirmed in an experiment which investigated the transverse form of this physical effect; that experiment was conducted by Ives and Stilwell. An expression for this effect uses a factor which equals the square root of quantity one plus beta over one minus beta. This effect causes changes in spectral lines in blueshift and redshift. For 10 points, name this effect which explains the perceived change in siren frequency for a passing ambulance.

ANSWER: **Doppler** effect

6. This country had two “school wars” over the role of religion in education. A Prime Minister of this country, Paul-Henri Spaak (SPOCK), wrote a 1956 report advocating the creation of the European Economic Community. The Council of the European Union and European Parliament meet here. After 1959 riots in Leopoldville, this country gave independence to the Congo. This country’s invasion by Germany caused the United Kingdom to enter World War I. For 10 points, name this country comprised of French-speaking and Dutch-speaking regions.

ANSWER: **Belgium** [Kingdom of **Belgium**; or Royaume de **Belgique**; or Koninkrijk **Belgie**; or Koenigreich **Belgien**]

7. The background of this painting, made using indigo and weld, was originally a deep green. It may have been inspired by a Michael Sweerts (SVEERTZ) portrait. The lack of definition on the left-hand side of its subject’s nose suggests it was made using a camera obscura, like its artist’s *View of Delft*. The title figure in this painting is wearing a yellow-and-blue turban, and its creation was fictionalized in a Tracy Chevalier novel. For 10 points, name this Jan (YON) Vermeer painting that depicts a young woman wearing a piece of jewelry.

ANSWER: ***Girl With A Pearl Earring*** [or ***Het meisje met de parel***]

8. This poem complains about people who “would have the rabbit out of hiding, to please the yelping dogs.” This poem’s speaker declares, “Spring is the mischief in me,” after saying of another character, “He is all pine and I am apple orchard.” While describing the title task, this poem’s speaker pokes fun at a simple neighbor who repeatedly quotes his father’s saying, “Good fences make good neighbors.” For 10 points, name this poem about repairing a dividing structure, written by Robert Frost.

ANSWER: “**Mending Wall**”

9. In this state, a community whose members practiced “stirpiculture” and manufactured silverware was founded by John Humphrey Noyes. The Millerites were one of the millenarian sects founded in this state’s “Burned-Over District.” This state was home to the Oneida (oh-NYE-duh) Community. Lucretia Mott and Elizabeth Cady Stanton organized a meeting in this state which created a feminist “Declarations of Rights and Sentiments.” For 10 points, name this state where the Seneca Falls Convention was held and the Erie Canal was constructed.

ANSWER: **New York**

10. This country’s military fired into riots that erupted in the West Point slum in response to a curfew. Formalities delayed entrance to this country’s newly-opened Bushrod Island clinic. Two Samaritan’s Purse workers were evacuated from this country for treatment with ZMapp in Atlanta. The man who later infected Nina Pham and Amber Vinson was criticized by President Ellen Johnson Sirleaf for lying to officials in this country in order to get to the U.S. For 10 points, name this home country of Thomas Eric Duncan, who contracted ebola in Monrovia.

ANSWER: **Liberia** [Republic of **Liberia**]

11. A Shinto deity of this domain kills a goddess that prepares a feast by vomiting out food. The Egyptian god Set tears off a body part of Horus that represents this type of object. In many East Asian cultures, rice cakes are produced by a rabbit living at this location. A goddess of this domain is enamored by the Greek youth Endymion (end-IM-ee-un). When this object is fully visible, a werewolf transforms from a human into a wolf. For 10 points, identify this domain represented by the Roman god Luna.

ANSWER: **moon** [or **moon** gods; or **lunar** deities]

12. One of these buildings led to the establishment of McKeesville by squatters hoping to be employed by Six Companies, Inc. One of them, named using the Guarani language, is shared between Paraguay and Brazil and is called Itaipu. The functional extinction of the baiji (BYE-gee) is partly attributed to the Three Gorges one of these structures on the Yangtze. Lake Mead was created by the one of them named after President Hoover. For 10 points, name these structures that are often used to generate hydroelectric power by obstructing river flow.

ANSWER: **dams**

13. This molecule is synthesized by a protein made of an F1 catalytic core linked by a gamma subunit to an FO (“F”-”O”) motor. Deprivation of this molecule can result in rigor mortis since it is essential for releasing actin from myosin (MY-uh-sin). The cost of moving pyruvate (pie-ROO-vayt) into an organelle matrix prevents this molecule from reaching its maximum yield of 38 molecules per glucose in aerobic respiration. For 10 points, identify this molecule generated in mitochondria (MYE-tuh-KON-dree-uh) that is the basic unit for cellular energy transfer.

ANSWER: **ATP** [or **adenosine triphosphate**]

14. With Alphonse of Poitiers (PWAH-tee-ey), this king defeated a force led by Hugh X (the tenth) of Lusignan (LOO-sin-YON) and Henry III of England at the Battle of Taillebourg (TYE-uh-borg). This ruler’s mother, Blanche of Castile, was his regent, and he commissioned the Sainte-Chapelle (SAHN-shu-PEL) to house the Crown of Thorns. This king dispensed justice from an oak tree in the forest of Vincennes, and he died from dysentery while he was on the Eighth Crusade. For 10 points, name this only King of France to be canonized.

ANSWER: **Saint Louis** [or **Louis IX**; prompt on **Louis**]

15. This poet popularized the use of oxymorons in love poetry, such as the metaphor of love as a “freezing fire.” This poet wrote about how he was taught to sublimate his erotic love into love of God by a woman he first saw on Good Friday. His major book, *Il Canzoniere* (CON-zoh-NAIR-ey), describes his love for a woman named Laura. For 10 points, name this Renaissance Italian poet who popularized a namesake kind of sonnet.

ANSWER: **Petrarch** [or Francesco **Petrarca**]



VHSL Scholastic Bowl  
Regional Tournament 2014  
Round 2  
Tiebreaker/replacement questions

1. This country's independence was supported by Countess Markievicz (MARK-uh-vitch), and it was the destination of arms smuggled by the *SS Libau* (lib-OW). The Piggott forgeries attempted to implicate politicians from this modern-day country in the Phoenix Park murders. In this country, the General Post Office served as the headquarters for a revolt in which James Connolly and Michael Collins participated. For 10 points, name this country where the 1916 Easter Rising occurred, an island that experienced a nineteenth-century potato famine.

ANSWER: Republic of **Ireland** [or **Eire**; or **Airlann**; do not accept "Northern Ireland"]

2. The title character of this author's first novel is assisted by the parson Abraham Adams in uniting with his beloved Fanny. He responded to Samuel Richardson's *Pamela* with the mocking narratives *Joseph Andrews* and *Shamela*. He also created a foundling who quarrels with Master Blifil and eventually marries Sophia Western. For 10 points, name this satirical novelist of *Tom Jones*.

ANSWER: Henry **Fielding**

3. This composer wrote a short opera in which Giorgetta opens a garment of clothing to see the dead body of her lover Luigi. In an opera by this composer, the protagonist sings about a man that pulls his ship into port and walks up a hill to see her. In another opera by this composer, the citizens of Peking stay up all night to find out the name of a prince who declares that "none shall sleep" in "Nessun dorma." Another of his operas ends with Rodolfo crying over the death of his lover Mimi. For 10 points, name this composer of *Madama Butterfly*, *Turandot*, and *La Boheme*.

ANSWER: Giacomo **Puccini** [Giacomo Antonio Domenico Michele Secondo Maria **Puccini**]

4. This state's Lake Francis Case was formed by the construction of Fort Randall Dam in 1944. This state's Buffalo County is the poorest in the United States. Another county in this state recently voted to change its name to Oglala Lakota; that is its Shannon County, located entirely within Pine Ridge Indian Reservation. It is divided into "East River" and "West River," whose largest settlement is Rapid City and features Badlands National Monument and the Black Hills. For 10 points, name this Plains state bisected by the Missouri River, home to Mount Rushmore.

ANSWER: **South Dakota**

5. Relevant quantities for one of these structures can be found by analyzing either meshes or nodes. Another method for solving them makes use of linear superposition. One technique for analyzing them considers that the sum of currents into a junction is zero, which is a rule named for Kirchoff. They can be simplified by combining series or parallel resistors into one. For 10 points, identify the term for electrical networks that often include voltage sources and resistors.

ANSWER: electrical **circuits**

What was the term for the Progressive-friendly domestic program of Theodore Roosevelt, which should not be confused with the later “New Deal”?

ANSWER: **Square Deal**

This is a calculation question. The sine of a second-quadrant angle is four-ninths times the square root of two. What is the cosine of that angle?

ANSWER: **-7/9** [do not accept “7/9” by itself]