



VHSL Scholastic Bowl
Regional Tournament 2015
Round 5
First Period, Fifteen Tossups

1. In October 2014, this company began to collect sales tax on purchases made by customers in Minnesota and Maryland. The “Authors United” campaign has criticized this company’s negotiation tactics with the publishing house Hachette. In August 2014, this company purchased the website Twitch, and in 2013, this company’s owner purchased *The Washington Post*. A December 2013 *60 Minutes* report on this company revealed that it hoped to begin making deliveries by drone. For 10 points, name this online retailer founded in 1994 by Jeff Bezos.
ANSWER: Amazon.com

2. In this video game, Mercury has been turned into a machine planet by the Vex. Antagonists in this game include the Fallen, the Cabal, and the Hive. This game takes place in the twenty-eighth century after an event called the “Collapse,” during which select members of humanity were saved by the “Traveler.” For 10 points, name this first-person shooter game in which players play as customizable Guardians who use a power called the “light” in their attempts to defend the last city on Earth.
ANSWER: Destiny

3. This culture believed in five sequential ages ruled by five different sun gods. A god of these people defeats his four hundred elder brothers immediately after he is born. This civilization legendarily built a city after seeing an eagle perched on a cactus, grasping a snake. A god of these people is defeated by Tezcatlipoca (TETZ-cat-lee-POH-kuh) and sails away on a raft of snakes. For 10 points, name this civilization whose feathered serpent deity Quetzalcoatl (KET-sul-coh-AA-tul) was confused with the conquistador Hernan Cortes (air-NAHN cor-TEZ).
ANSWER: Aztecs

4. For a photon, energy is equal to this quantity times the speed of light. For other bodies, kinetic energy is equal to this quantity squared over twice the mass. For a wave, it is calculated as Planck’s constant over the wavelength. Force is the rate of change of this quantity, and impulse is the total change in it. It is conserved in both inelastic and elastic collisions. For 10 points, identify this quantity which is the product of mass and velocity.
ANSWER: linear momentum [do not accept “angular momentum”]

5. This man founded what became the tabloid paper *The New York Post*. He was embarrassed by his affair with Maria Reynolds, and both he and his son were killed in Weehawken, New Jersey. In his “Report on Public Credit,” this man proposed that the federal government assume the Revolutionary War debts of states. He joined John Jay and James Madison in writing essays promoting the ratification of the Constitution. This man was eventually killed in a duel with rival Aaron Burr. For 10 points, name this Federalist leader and first Secretary of the Treasury.
ANSWER: Alexander Hamilton

6. A region of this organ may be distinguished by immune tissue called Peyer's patches, and its Brunner's glands secrete bicarbonate. An enzyme secreted by this organ converts trypsinogen (trip-SIN-uh-jen) into trypsin. This organ absorbs fats through the lacteals in its villi. The pancreatic duct supplies this organ with bile and alkaline juices to buffer against the acidic chyme (KIME) it receives through the pyloric sphincter, which connects to its duodenum (doo-AHD-uh-num). For 10 points, name this organ that receives food contents from the stomach.

ANSWER: **small intestine** [prompt on **intestines**]

7. The largest lion subspecies, now extinct in the wild, was last found in this country. This country refers to a disputed territory as the Southern Provinces, one-third of which is controlled by the Polisario (poh-lee-SAH-ree-oh) Front. Blond hair is common among the natives of this country's coastal Rif mountains. This country recognizes Berber as an official language, and its highest point, Toubkal, is part of the High Atlas Mountains. For 10 points, the territory of Western Sahara is claimed by what North African country, whose largest city is Casablanca?

ANSWER: **Morocco** [Kingdom of **Morocco**; or Al Mamlakah al **Maghribiyah**]

8. This quantity and entropy are the natural variables of internal energy. If this quantity doesn't change, then a system undergoes no flow work. Pressure times this quantity has units of energy. Avogadro's law sets the number of moles proportional to this property. The ideal gas law assumes this quantity is zero for individual particles. Molarity is defined as moles of solute divided by this property of the solution. At STP, this property for one mole of gas equals 22.4 liters. For 10 points, name this measurement of the amount of space an object takes up.

ANSWER: **volume** [or **V**]

9. A phrase from this play titles a novel in which Alfio Marullo gives his shop to Ethan Hawley, written by John Steinbeck. A character in this play admits he "cannot prove a lover," resolving instead to "prove a villain." The opening speech of this play declares the "sun of York" has made "glorious summer" of the "winter of our discontent." The title character of this play cries, "A horse, a horse, my kingdom for a horse!" before being killed during the Battle of Bosworth Field. For 10 points, name this Shakespeare history about a villainous king.

ANSWER: **Richard III** [or *The Tragedy of King* **Richard the Third**]

10. Laborers producing this material were removed from "a state of slavery or bondage" in a 1775 Scottish law, and the safety of its extraction was improved by the Geordie lamp. A "paradox" of energy efficiency was proposed in a book about this material's "question" by William Jevons. It was converted using beehive ovens into a fuel for smelting iron, and it was used to create steam for James Watt's engine. For 10 points, coke relied on what fuel which can be lignite, bituminous (bye-TOO-muh-nus), or anthracite?

ANSWER: **coal**

11. In a play by this author, the title character is upset that a writer's death in a brothel is not as beautiful as the death she envisioned for him. The title character of that play by this man shoots herself after being blackmailed by Judge Brack. This author also created a woman who forged her father's signature to take out a loan for a trip to Italy without the knowledge of her husband, Torvald. For 10 points, name this Norwegian playwright of *Hedda Gabler* who wrote about Nora Helmer in *A Doll's House*.

ANSWER: Henrik **Ibsen**

12. This country's Decree 770 restricted access to abortion in an attempt to raise its flagging birth rate. This country was the only Warsaw Pact member to oppose the 1968 invasion of Czechoslovakia. Ion Antonescu (an-tah-NESK-yoo) was removed from power by a coup led by this country's King Michael in 1944, which also led to the country joining the Allies. For 10 points, name this country which was led by Nicolae Ceausescu (chow-CHESS-ku) during the latter half of the Cold War from its capital of Bucharest.

ANSWER: **Romania**

13. Techniques used in this dance form include the cramp roll and the scuff. Its pioneers include the vaudeville act Buck and Bubbles. This dance was featured in *Bring In 'da Noise, Bring In 'da Funk* by choreographer Savion Glover. Gene Kelly performs this kind of dance in the title number of "Singin' in the Rain." This dance comes in rhythm and Broadway varieties, and it developed from clog and step dancing. For 10 points, name this jazz dance style whose performers rhythmically hit the floor with their shoes.

ANSWER: **tap** dance

14. In a story from this collection, a reverend breaks the bell tower window with his fist after seeing the local schoolteacher praying naked. This collection includes "The Strength of God" and a story about the disgraced homosexual Wing Biddlebaum, entitled "Hands." In this collection's final story, "Departure," George Willard leaves the title town for the city. For 10 points, name this short story collection by Sherwood Anderson set in the Midwest.

ANSWER: **Winesburg, Ohio**

15. The Lords of Xibalba (shuh-BAHL-buh) designed a series of trials to test some beings with this relationship, named Hunahpu (hoo-NAH-poo) and Xbalanque (shee-buh-LAHN-kay). Amphion (AMF-ee-ahn) and Niobe's (nye-OH-bee's) children were killed by deities with this relationship to each other. This is the relationship of the Dioscuri (dye-usk-YOO-ree) born to Leda, who are immortalized in the constellation Gemini. For 10 points, name the relationship of Artemis and Apollo and of Castor and Pollux.

ANSWER: **twins** [prompt on **brothers**; prompt on **siblings**; prompt on **brother and sister**]



VHSL Scholastic Bowl
Regional Tournament 2014
Round 5
Directed Round

1A. What untuned instrument, traditionally made from a ram's horn, is blown during services for Rosh Hashanah (rohsh ha-SHAH-nah) and Yom Kippur (yahm kee-POOR)?

ANSWER: shofar

1B. What type of verb is used to express actions that are done to oneself, such as in the Spanish sentence "Me lave la cara" (may lah-VAY lah cah-rah), meaning "I washed my face?"

ANSWER: reflexive verbs [or verbos reflexivos]

2A. Name the probe from the *Rosetta* spacecraft which successfully landed on Comet 67P in November 2014.

ANSWER: Philae

2B. Name the 1773 to 1775 Cossack uprising against Catherine the Great which attempted to eliminate serfdom.

ANSWER: Pugachev's Rebellion

3A. This is a 20-second calculation question. Given that the cosecant of an angle theta equals one-fourth times the square root of 41, what are the two possible values for the tangent of theta?

ANSWER: 4/5 and -4/5 [or 0.8 and -0.8; or plus or minus 4/5; or plus or minus 0.8]

3B. This is a 20-second calculation question. A and B are independent events. The probability of event A is 1/3. The probability of event B is 3/8. What is the probability that neither event A nor event B occurs?

ANSWER: 5/12 [or 10/24]

4A. What man wrote the words to "The Star-Spangled Banner" while watching the bombardment of Fort McHenry during the War of 1812?

ANSWER: Francis Scott Key

4B. What confederation of Northern European cities, with a capital at Lübeck, dominated trade in the Baltic and North Seas during the late Middle Ages?

ANSWER: Hanseatic League [or Hansa]

5A. What 2014 sequel film featured a jewel thief named Constantine, who is an exact duplicate of Kermit the Frog?

ANSWER: Muppets Most Wanted [exact answer required; do not prompt on "The Muppets"]

5B. One organism steals food or materials from another in the “klepto-” form of what species interaction, contrasted with commensalism (cuh-MEN-suh-liz-m) and mutualism?

ANSWER: **parasitism** [or **parasites**]

6A. What generalization of Rolle’s (RUL’s) Theorem states that, for a curve between points a and b, there exists a tangent on the curve with the same slope as the secant connecting a and b?

ANSWER: **mean value** theorem [or **MVT**]

6B. What Art Nouveau creator of *Girl with Cherry Blossoms* was known for his opalescent stained glass windows and lamps?

ANSWER: Louis Comfort **Tiffany**

7A. What metrical foot, which can be thought of as the “opposite” of an anapest (AA-nuh-pest), consists of one stressed syllable followed by two unstressed syllables?

ANSWER: **dactyl**

7B. When performing a hypothesis test, the power of a test equals one minus the probability of making what type of error?

ANSWER: **Type II** error [or **failing to reject the null hypothesis when it is false**; or **accepting the null hypothesis when it is false**; prompt on **failing to reject the null hypothesis**; prompt on **accepting the null hypothesis**]

8A. This is a 30-second calculation question. According to a recipe, I can bake my cake in either a circular pan with height 1 inch and radius 8 inches, or a rectangular pan with height 1 inch, width 10 inches, and length n inches. To the nearest integer, what is n?

ANSWER: **20** inches

8B. This is a 30-second calculation question. Two hours ago, there were 5400 gallons of water in a tank. At the present time, there are 3600 gallons of water in the tank. If an inverse variation between time and the volume of water in the tank exists, how much water will be in the tank two hours from now?

ANSWER: **2700** gallons

9A. What Kazuo Ishiguro (KAHZ-whoa ee-shee-GOO-roh) novel is narrated by Lord Darlington’s loyal butler Stevens?

ANSWER: *The **Remains of the Day***

9B. What proto-surrealist French poet wrote *A Season in Hell* and “The Drunken Boat”?

ANSWER: Arthur **Rimbaud**

10A. What dormant volcano on the Island of Hawaii is home to a namesake astronomical observatory complex on its summit?

ANSWER: **Mauna Kea**

10B. What Ralph Ellison novel is narrated by an unnamed black man who joins the Brotherhood?

ANSWER: *Invisible Man* [do not accept “The Invisible Man”]



VHSL Scholastic Bowl
Regional Tournament 2014
Round 5
Third Period, Fifteen Tossups

1. The iTunes version of this album features a bonus track entitled “I Found A Boy.” The music video for a song from this album is shot in black and white and shows the singer walking through Paris alone. A song from this album features the lyrics “you made a fool out of me and boy you’re bringing me down” and is called “Rumour Has It.” This album’s debut single opens with the line “There’s a fire starting in my heart.” For 10 points, name this album by Adele (uh-DEL), which features the hits “Someone Like You” and “Rolling In The Deep.”

ANSWER: 21

2. This man wrote about a changing society by using an analogy of “a polar night of icy darkness.” Such a bureaucratic society, according to this man, traps individuals in an “iron cage” based on hierarchy and division of labor. This thinker is best known for describing how Calvinist religions prompted Europeans to work harder at capitalist businesses. For 10 points, name this German sociologist who wrote *The Protestant Ethic and the Spirit of Capitalism*.

ANSWER: Max Weber [Karl Emil Maximilian Weber]

3. This artist painted a white-faced clown in his unfinished *The Circus*. This artist set his most famous painting on the opposite bank of the Seine (SEN) as his earlier canvas *Bathers at Asnières* (an-YAIR). With Paul Signac (SEEN-yak), he developed divisionism. One of his paintings features a woman in the foreground with a fishing rod and a monkey on a leash, and is made using his trademark small dots of color. For 10 points, name this painter of *Sunday Afternoon on the Island of La Grande Jatte* (lah GRAHN jot), who created pointillism.

ANSWER: Georges-Pierre Seurat

4. The nabla symbol is an upside-down version of this capital letter. This letter names an angle formed by the intersection of two tangent lines. It also names a function that integrates to the Heaviside step function; two versions of that function are named after Kronecker and Dirac. This letter is commonly used as shorthand for both the determinant of a coefficient matrix and the discriminant. This letter is paired with epsilon in a common definition of a limit. For 10 points, give this Greek letter that often stands for the change in a variable.

ANSWER: delta [do not accept “d”]

5. After this event, the President quoted a poem describing people slipping “the surly bonds of Earth to touch the face of God.” The Rogers Commission, which investigated this event, included Richard Feynman and Chuck Yeager. It killed a schoolteacher named Christa McAuliffe. This event was caused by the failure of an O-ring seal, which led to the destruction of a vehicle taking off from Cape Canaveral. For 10 points, name this 1986 disaster when a NASA Space Shuttle exploded during its launch.

ANSWER: Challenger disaster

This is page 7 of 11 total pages in this round.

This is Round 5 of 8 total rounds in the VHSL Regional Tournament 2015 question set.

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6. This man's campaigns were partially funded by Haitian president Alexandre Petion. The British Legion, led by James Rooke, joined him at Carabobo. This man was assisted by his future vice president, Francisco Santander, at the Battle of Boyacá (boy-uh-CAH). This man joined Antonio José de Sucre (ho-SAY day SOO-cay) for a campaign in Peru, two years after meeting with José de San Martín at the Guayaquil (guy-uh-KEEL) Conference. For 10 points, name this first president of Gran Colombia, a South American revolutionary known as "The Liberator."

ANSWER: Simon **Bolivar**

7. In plants, cytoplasmic strands tug this organelle around the cell and clear a path for its migration. Cargo can be transported into this organelle with the help of importins. Lamins (LAH-minz) in this structure are broken down during mitosis and may regulate chromatin (KROH-muh-tin) organization. Its namesake envelope is contiguous with the rough ER; in eukaryotes (yoo-CARE-ee-oats), this organelle is the site of transcription. For 10 points, name this organelle that controls gene expression and often contains a nucleolus.

ANSWER: **nucleus**

8. This author wrote two versions of a long prose romance called *The Countess of Pembroke's Arcadia*. He argued against contemporary denunciations of literature as a corrupting art in his *The Defense of Poesy*. This poet also wrote a sonnet sequence fictionalizing his love for Penelope Rich. For 10 points, name this Elizabethan poet and nobleman who wrote *Astrophil* (AA-stroh-fil) and *Stella*.

ANSWER: Philip **Sidney**

9. The complex numbers are algebraically closed because at least one of these things exists for all polynomials. Niels Abel proved there is no general method for finding these numbers for functions of a high enough degree. Given a function, Descartes' Rule of Signs gives an upper bound for the number of real ones of these things. They can be found for some polynomials by factoring the polynomial into linear terms. For 10 points, name these values of a function's domain when the function equals zero.

ANSWER: **root** of a polynomial [or **solution** to a polynomial equation; or **zero** of a function until "zero" is read; do not accept "square root"]

10. This man miraculously crushed a rock during the Battle of the Trench. He rode the horse Buraq as part of a trip known as the "Night Journey." This man married a child known as Aisha (eye-EE-shuh), who was his favorite wife after his first, the wealthy Khadija (kuh-DEE-juh). This person's uniqueness is testified to in the Shahada (shuh-HAH-duh). His teachings are recorded in collections known as the Hadith. During the Hijra (HEHJ-ruh), this man fled from Mecca to Medina. For 10 points, name this final prophet and founder of Islam.

ANSWER: **Muhammad**

11. This group was the subject of the bull *Vox in excelsio* (VOCKS in eck-SEL-see-oh), which contradicted the secret Chinon (shih-NAHN) parchment. This group was founded by Hugh de Payens and condemned at the Council of Vienne (vee-EHN), after which its final leader, Jacques de Molay, was burned at the stake by Philip the Fair. For 10 points, name this religious and military order founded to protect Christian pilgrims to the site of a former holy building in Jerusalem.

ANSWER: Knights **Templar** [or **Templars**; or Order of the **Temple**; or **Poor Fellow-Soldiers of Christ** and of the Temple of Solomon]

12. When climbing this mountain, Bradford Washburn proved that Frederick Cook's 1906 ascent never happened. The 1910 "Sourdough Expedition" climbed the North Summit of this mountain. Just southeast of this mountain in its namesake national park is a highly difficult-to-climb peak known as Mount Hubbard or "The Moose's Tooth." This peak's native name is "Denali" (duh-NAH-lee), which also names the national park in the Alaska Range where it is found. For 10 points, name this highest mountain in North America.

ANSWER: Mount **McKinley** [or Mount **Denali** until "Denali" is read]

13. The protagonist of this novel flirts with women in the Lavender Room before being forced to pick up their tab. In this novel, the protagonist's roommate Stradlater goes on a date with his ex-girlfriend, Jane Gallagher. The protagonist's brother Allie died before the events of this novel, and his sister Phoebe ends this novel riding a carousel in Coney Island. This book opens as the administration of Pencey Prep decides to expel Holden Caulfield. For 10 points, name this novel by J. D. Salinger.

ANSWER: *The **Catcher in the Rye***

14. According to Benford's Law, this number is the most common leading digit across a set of data points. If two events are complementary, then the sum of their probabilities equals this value. The infinite sum of one-half, one-fourth, one-eighth, one-sixteenth, and so on, converges to this value. A number raised to the power of zero equals this number, as does zero factorial. For 10 points, identify this number that is paired with zero in the binary number system.

ANSWER: **one**

15. This war is the backdrop for the Buster Keaton comedy film *The General*. It is the subject of the first part of a film adaptation of a Thomas Dixon novel, about two families called the Stonemans and the Camerons. That film about this war was directed by D.W. Griffith and is titled *The Birth of a Nation*. In another film about this war, Rhett Butler and Scarlett O'Hara manage to survive the burning of their city. For 10 points, name this war, which is depicted in the Georgia-set epic *Gone With the Wind* and the Steven Spielberg-directed *Lincoln*.

ANSWER: American **Civil** War



VHSL Scholastic Bowl
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Round 5
Tiebreaker/replacement questions

1. Although it is better known for its shipwrecks, the Skeleton Coast of Namibia was named for the bones of these animals. The former South African exclave of Walvis Bay takes its name from these animals. Ambergris, a substance formed in these animals' digestive systems, was a common ingredient in perfumes. In response to a ban on the commercial hunting of these animals, Japan formed the Institute of Cetacean Research. For 10 points, name these sea-dwelling animals, whose "blue" variety is the largest animal in existence.

ANSWER: whales [or Cetacea until it is read]

2. The Kaluza-Klein theory unifies electromagnetism with this phenomenon, whose namesake waves are observed by LIGO and VIRGO. This phenomenon, whose "lensing" can cause light to bend around massive objects, also bends the fabric of spacetime according to general relativity. This phenomenon, the weakest of the four fundamental forces, is proportional to the product of two masses divided by the distance between them squared. For 10 points, name this force that causes objects to fall to Earth.

ANSWER: gravity [or gravitation; or gravity waves; or gravitational lensing]

3. A character in this novel paints a hoof and a horn on a green flag before hoisting it. Another character in this novel has the motto "I will work harder." In this novel, sheep are taught the principle, "four legs good, two legs bad," though that and the other Commandments are ultimately reduced to "all animals are equal, but some animals are more equal than others." For 10 points, name this allegory of Stalinism written by George Orwell.

ANSWER: Animal Farm

4. This group was led during the Civil War by Stand Watie. A member of this group, Elias Boudinot, was assassinated for signing the Treaty of New Echota. The missionary Samuel Worcester lived with these people and sparked a Supreme Court case which allegedly inspired the president to say "now let him enforce it!" This tribe's alphabet was created by Sequoyah. For 10 points, name this "Civilized Tribe" which was forcibly relocated to Oklahoma on the Trail of Tears.

ANSWER: Cherokee [or Tsalagi]

5. A sculpture commonly named after this deity, made from oolitic (OH-uh-lit-ik) limestone and painted in red ochre (OH-kur), has a head covered in a braided pattern. That sculpture is a Paleolithic figurine anachronistically called this deity "of Willendorf" (VIL-un-dorf). A marble sculpture named for this goddess, long thought to be the work of Praxiteles (prak-SIT-uh-leez), was discovered on a namesake Greek island and is known for its now-missing arms. For 10 points, a sculpture "of Milo" is named after what Roman goddess of love?

ANSWER: Venus

What substance was licked by the primeval Norse cow Audhumbla (ah-DOOM-bluh) to liberate Ymir (IM-eer), a giant?

ANSWER: **ice** [or **frost**; do not accept “water”]

This is a calculation question. Find all values theta on the interval from 0 to 360 degrees, inclusive, such that cotangent squared theta minus 2 cotangent theta equals negative 1.

ANSWER: **45** degrees and **225** degrees [do not accept answers with more or fewer than two values]