



2013 VHSL Districts  
Round 1  
First Period, Fifteen Tossups

1. In this country, the Franz Josef glacier lies on a coast west of the Canterbury Plains. This country owns the Kermadec Islands and Hawkes Bay. Its tallest point, Aoraki, is part of a non-European mountain range, the Southern Alps. Marlborough Bay is an extension of the Cook Strait, which separates this country's two largest components. For 10 points, name this country with a South Island and a North Island, the latter of which contains cities such as Wellington and Auckland.

ANSWER: New Zealand

192-12-73-01101

2. Stanley Prusiner (PROOZ-ner) won a Nobel Prize for his work on these objects. Diseases caused by them include the rare fatal familial insomnia, and they are sometimes thought to be an exception to the central dogma of molecular biology. They cause the neurodegenerative Creutzfeld-Jakob (KROITS-feld YA-cup) disease, the human equivalent of bovine spongiform encephalopathy (en-sef-uh-LOP-uh-thee). For 10 points, name these misfolded proteins which cause diseases such as mad cow disease.

ANSWER: prions [or proteinaceous infectious agents]

024-12-73-01102

3. This author wrote about Rosalie, who experiences newfound youth in old age, in *The Black Swan*. Another of this author's protagonists has discussions with the Jesuit Leo Naphta and carries on an affair with Claudia while visiting his cousin, Joachim Ziemssen, in a Swiss sanatorium. He described Gustav von Aschenbach's infatuation with the young boy Tadzio in a novella set in Italy. For 10 points, name this German author of *The Magic Mountain* and *Death in Venice*.

ANSWER: Thomas Mann

192-12-73-01103

4. A *lanista* was put in charge of these people, who were divided into a series of different grades, or *pali*. Types of these people included the *thraex*, the *retiarius*, and the *murmillo*. The emperor Commodus often posed as one of these people, who could be killed if the crowd gave a thumbs-down sign. For 10 points, name these Roman slaves, such as Spartacus, who fought to the death in amphitheaters in public combats.

ANSWER: gladiators [or gladiatores; prompt on Roman slaves]

080-12-73-01104

5. This state's city of Clinton is the location of the "World's Largest Curio Cabinet" at its Route 66 Museum. A museum in Sallisaw commemorates the fact that this state has flown fourteen different flags. Beaver and Cimarron are two of the three counties that make up its western extension, also known as this state's panhandle. For 10 points, name this state bordered on the north by Kansas and across the Red River from Texas.

ANSWER: Oklahoma

023-12-73-01105

6. In one battle during this war, Phineas Riall stated, "Those are regulars, by God!" This war's bloodiest battle took place at Lundy's Lane. The Hartford Convention arose out of discontent with this war. It included the Battle of Bladensburg, after which Washington was burned. The War Hawks strongly pushed for this war, during which Andrew Jackson commanded troops at the Battle of New Orleans. For 10 points, name this war ended by the Treaty of Ghent and named for the year in which it began.

ANSWER: War of 1812

192-12-73-01106

7. Unlike temperature, this quantity is held constant in the Joule-Thomson effect. Given this quantity for individual steps of a reaction, one can find this quantity for the overall reaction by using Hess's law. The difference between this quantity and the product of temperature and entropy is Gibbs free energy. For 10 points, identify this thermodynamic state function which is symbolized H, often referred to as the heat content of a system.

ANSWER: enthalpy [prompt on H until it is read; do not accept or prompt on "entropy"]

189-12-73-01107

8. Opponents of this man display three red stars in the middle white stripe of a green, white, and black flag. The "Friday of Dignity" demonstrations in places such as Baniyas protested this leader. Kofi Annan gave up on a peace plan with this member of the Alawite religious minority, who succeeded his father Hafez in 2000, and has since ordered the shelling of Homs and Aleppo. For 10 points, name this dictator opposed by an insurgency in Syria.

ANSWER: Bashar Hafez al-Assad

104-12-73-01108

9. One character in this work imitates "the shade of my mother" and has "murdered your twelve secretaries." Its "footnote" proclaims "everything is holy!" and that "the bum's as holy as the seraphim." This poem's third section is addressed to Carl Solomon and contains the refrain "I'm with you in Rockland." It begins with the line "I saw the best minds of my generation destroyed by madness." For 10 points, name this poem which titles a 1956 collection by Allen Ginsberg.

ANSWER: "Howl"

052-12-73-01109

10. This President's first director of the OMB, Bert Lance, resigned due to corruption charges. This President's "Malaise Speech" discussed a lack of confidence among Americans. This President signed SALT II with Brezhnev and negotiated, with Omar Torrijos (tor-EE-hos), the transfer of the Panama Canal. Under his Presidency, the Camp David Accords were signed, and the Iran Hostage Crisis began. For 10 points, name this President who was elected in 1976 after serving as governor of Georgia.

ANSWER: Jimmy Carter [or James Earl Carter, Jr.]

192-12-73-01110

11. This man composed an opera that begins with a curse imposed on the singer of the song "Questa o quella." In another of his operas, the title hunchbacked court jester plots to murder the Duke of Mantua, who sings about the fickle nature of women in the aria "La donna e mobile" (MOH-bee-lay). In one of his operas, the title Ethiopian princess is brought as a slave to Egypt. For 10 points, name this composer of the operas *Rigoletto* and *Aida*.

ANSWER: Giuseppe Fortunino Francesco Verdi

052-12-73-01111

12. A controversial Islamic hadith declares that this man was ninety feet tall. According to some traditions, this man was originally married to a woman who refused to be subservient to him, named Lilith. Believed to be the archangel Michael by Mormons, this man's "helper" is created from one of his ribs. He is told "dust thou art, and unto dust shalt thou return." This man is the father of Cain and Abel. For 10 points, name this first man created by God, the husband of Eve.

ANSWER: Adam

052-12-73-01112

13. The square of this quantity is inversely proportional to the Grashof number, and when this quantity is zero, the Navier-Stokes equations reduce to the Euler equations. The Reynolds number is inversely proportional to this quantity, and this value is constant for Newtonian fluids. This quantity comes in kinematic and dynamic varieties, the latter of which is measured in poise. For 10 points, identify this quantity which is the ratio of shear stress to shear velocity, the measure of a fluid's resistance to flow.

ANSWER: viscosity

189-12-73-01113

14. This publication criticized Scientology in the article "The Thriving Cult of Greed and Power." The "In the Arena" column in it is written by Joe Klein, and it is currently edited by Fareed Zakaria. Created by Briton Hadden and Henry Luce, its first cover depicted former Speaker of the House Joseph Cannon. A 2011 issue honored "the protester." This magazine has named Adolf Hitler, Mark Zuckerberg, and "you" as its Person of the Year. For 10 points, name this weekly newsmagazine.

ANSWER: TIME

052-12-73-01114

15. Atoms with large values for this quantity will deshield protons in NMR spectroscopy. According to one scale, the difference in this quantity is calculated using the square root of the difference in the bond dissociation energies. On that scale named for Linus Pauling, a value of 4.0 for this property is the highest and belongs to fluorine. A large difference in this quantity over a covalent bond creates a dipole. For 10 points, name this property of an atom in a compound to attract electrons to itself.

ANSWER: electronegativity

190-12-73-01115



1A. What English playwright wrote about two hitmen waiting for their target in a basement in the play *The Dumb Waiter*?

ANSWER: Harold **Pinter**

1B. What political party nominated Jill Stein for president in 2012 and received 0.36% of the popular vote?

ANSWER: **Green** Party of the United States [or **GPUS**]

2A. Six, twenty-eight, and four-hundred ninety-six are the first three examples of what kind of number equal to the sum of its positive divisors, excluding itself?

ANSWER: **perfect** numbers

2B. What painting, parodied in Duchamp's *L.H.O.O.Q.*, depicts a woman with a famous enigmatic smile?

ANSWER: **Mona Lisa** [or La **Gioconda**]

3A. Joe B. Hall and Adolph Rupp served as the head basketball coach of what university, currently led by John Calipari?

ANSWER: University of **Kentucky** Wildcats [or University of Kentucky **Wildcats**]

3B. Which catecholamine (CAT-uh-COAL-uh-meen) neurotransmitter is under-produced by the substantia nigra (NYE-gruh) in Parkinson's disease?

ANSWER: **dopamine**

4A. What literary device, exemplified by Aristophanes's frogs saying "Brekekekex koax koax," is the usage of words that imitate the natural sound of an object?

ANSWER: **onomatopoeia**

4B. What 1988 novel about Indian actors named Gibreel and Saladin caused its author, Salman Rushdie, to receive a *fatwa* calling for his death?

ANSWER: *The* **Satanic Verses**

5A. This is a 20-second calculation question. A right triangle has hypotenuse 25 and one leg 7. Find the area of the triangle.

ANSWER: **84**

5B. This is a 20-second calculation question. What is the tangent of 19 pi over 4 radians?

ANSWER: **-1**

6A. What property's ratio to charge is measured in a namesake spectroscopy and is imparted to matter by the Higgs mechanism?

ANSWER: **mass**

6B. What John Philip Sousa march is the "National March" of the United States and has a title referring to the American flag?

ANSWER: "The **Stars and Stripes Forever**"

7A. This is a 30-second calculation question. If the sum of two numbers is 9, and the sum of their squares is 45, what is their product?

ANSWER: **18**

7B. This is a 30-second calculation question. Give a 95% confidence interval for the true mean of a population given a sample with sample mean 105 and a known population standard deviation of 10. Round both the low and high ends of the interval to the nearest whole number.

ANSWER: **(85,125)** [or from **85 to 125**]

8A. Which economic construct displays the inverse relationship between inflation and unemployment?

ANSWER: **Phillips curve**

8B. Which American band, whose lead singer is Anthony Kiedis, has released such songs as "Dani California" and "Under the Bridge," as well as the album *Californication*?

ANSWER: The Red Hot **Chili Peppers** [or **RHCP**]

9A. What 1942 World War II battle, fought between aircraft carriers who never saw each other, was fought in a body of water off the coast of Australia?

ANSWER: Battle of the **Coral Sea**

9B. Which American school of philosophy, which lends its name to a book by William James, sought to consider the practical value of hypotheses?

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

10A. What experiment used an interferometer to disprove the existence of the luminiferous aether?

ANSWER: **Michelson-Morley** experiment

10B. What playwright wrote about a battling married couple in the play *Who's Afraid of Virginia Woolf*?

ANSWER: Edward Franklin **Albee**



2013 VHSL Districts  
Round 1  
Third Period, Fifteen Tossups

1. A molecular field is involved in the creation of this phenomenon according to a theory of Weiss (VICE). A system that exhibits this phenomenon serves as the canonical example of hysteresis. This phenomenon vanishes above a certain temperature, when the spins become disordered; that temperature is called the Curie point. This phenomenon arises when the electron spins in a material are all aligned in the same direction. For 10 points, name this form of permanent magnetism exhibited by iron.

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

064-12-73-01117

2. One leader of this country received a telegram from Salvador Dali about "introducing the presidential scepter." This country's secret police was the Securitate (sek-YUR-it-ot). During World War II, this country was led by the Iron Guard, and its oil refineries were bombed in Operation Tidal Wave. On Christmas Day 1989, the Communist leader of this country and his wife Elena were executed. For 10 points, name this Eastern European nation once led by dictator Nicolae Ceausescu (cho-CHES-kew).

ANSWER: **Romania**

052-12-73-01118

3. One line in this work describes leaves of yellow, black, and "hectic red." Its third stanza begins by describing "summer dreams" which came out of the "blue Mediterranean," and its title phenomenon is described as "tameless, and swift, and proud." The poet implores the title phenomenon to "make me thy lyre" and calls it the "breath of Autumn's being." This poem ends by asking, "If winter comes, can Spring be far behind?" For 10 points, name this ode by Percy Bysshe Shelley.

ANSWER: **"Ode to the West Wind"**

192-12-73-01119

4. One work in this style depicts a barren pink patio overlooking a splash into a pool. An artist working in this style depicted a woman thinking she'd "rather sink than call Brad for help" and a P-51 Mustang firing a rocket as its pilot "pressed the fire control," in *Drowning Girl* and *Whaam!*, which used comic book panels. Another artist in this style used many Campbell's Soup labels. For 10 points, name this art style popularized by Roy Lichtenstein and Andy Warhol, which utilized mass culture objects.

ANSWER: **Pop Art**

052-12-73-01120

5. One character in this story plays tunes that are described as sadder than Weber's final waltz. The narrator of this work recalls the singing of a song in his childhood, called "The Haunted Palace." In this story, which is featured in *Tales of the Grotesque and Arabesque*, Roderick dies when Madeleine reappears after being buried alive under the title family residence. For 10 points, name this short story by Edgar Allan Poe.

ANSWER: "The **Fall of the House of Usher**"

192-12-73-01121

6. A variant of this language typically spoken by criminals is known as Fenya. This language features distinctions based on the palatalization of its consonants, and its Southern form features an unusual pronunciation of the unstressed "o" known as "okanye." This language uses the Cyrillic alphabet, and it is the most commonly spoken Eastern Slavic language. For 10 points, name this language, which is related to Belarusian and Ukrainian and spoken by many people in Moscow.

ANSWER: **Russian**

192-12-73-01122

7. In one of this man's short stories, Reuben Bourne accidentally shoots his own son in the same place where he failed to bury Roger Malvin. This author described Reverend Hooper's refusal to remove the title cloth in "The Minister's Black Veil," and he wrote another story about a man who finds his wife at a witches' sabbath. He also described the ostracism of the adulteress Hester Prynne. For 10 points, name this author of "Young Goodman Brown" and *The Scarlet Letter*.

ANSWER: Nathaniel **Hawthorne**

192-12-73-01123

8. In his form as Ehecatl (eh-heh-COT-ul), this deity blew on the sun and moon after two other gods threw themselves on a funeral pyre. This god created humans by sprinkling blood on bones, and his twin was the dog-headed Xolotl (shuh-LOT-ul). This god sailed on a raft of snakes. This deity's rival notably had a "smoking mirror" and was named Tezcatlipoca (TEZ-cat-lu-POH-cuh). For 10 points, name this Aztec god, whose name means "feathered serpent."

ANSWER: **Quetzalcoatl**

192-12-73-01124

9. This country's territories include the Laccadive Islands, while its western portion is largely covered by the Thar Desert. It is separated from its southeast neighbor by the Palk Strait, and its states of Kerala and Tamil Nadu are south of the Deccan Plateau. The Bay of Bengal borders the southeast side of this country, whose longest river is the Ganges. For 10 points, name this country that borders Pakistan to the east and has cities such as Calcutta and Mumbai.

ANSWER: Republic of **India** [or **Bharat** Ganarajya]

192-12-73-01125

10. The "specific" type of this physical value can be used to describe the efficiency of a propulsion system. This term is sometimes applied to the Dirac delta function, giving rise to the use of a "train" of them. This physical value shows that a small force applied for a long period of time can have the same momentum change as a large force for a brief period of time. It is equal to the change in momentum. For 10 points, identify this quantity also equal to the product of force and time.

ANSWER: **impulse**

084-12-73-01126

11. This operation has the property of multilinearity, and it can be found by expansion by cofactors. The solution to a system of linear equations with a unique solution can be found using ratios of this operation in the method known as Cramer's rule. This operation must not return zero for a matrix to be invertible. Switching the rows and columns of a matrix switches the sign of this operation. For 10 points, name this matrix operation, which, for the two-by-two matrix  $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ , is simply  $d$  minus  $b$   $c$ .

ANSWER: **determinant** [or **mapping** until "expansion" is read]

048-12-73-01127

12. This character repeats "tell people what?" several times to his dancing friends at a wedding, and develops a technique known as the "Lorenzo Van Matterhorn." This character's brother, James, is played by Wayne Brady, and believes that Bob Barker is his father. He cheats on his girlfriend, Nora, in an episode in which Cobie Smulders's character, Robin, also effectively rejects him. For 10 points, identify this ladies' man from *How I Met Your Mother*, played by Neil Patrick Harris.

ANSWER: Barnabus "Barney" **Stinson** [or **Barnabus**; or **Barney**]

189-12-73-01128

13. This scientist demonstrated that light was composed of seven spectral hues in his seminal work *Opticks*. One law named for this scientist states that the rate of temperature change for a body is proportional the temperature difference between a body and its surroundings. Another of his laws can be expressed as "force equals mass times acceleration." For 10 points, name this physicist who wrote the *Principia Mathematica* and formulated three laws of motion.

ANSWER: Isaac **Newton**

189-12-73-01129

14. This man adopted a "Long Breath" strategy in supporting republican forces fighting in Yemen. Before rising to his highest post, he served in the Free Officers Movement alongside Muhammad Naguib (nah-GEEB), with whom he deposed Farouk. This man led his country into a unification with Syria that created the United Arab Republic, and he built the Aswan High Dam after taking control of the Suez Canal. For 10 points, name this man who served as President of Egypt until 1970.

ANSWER: Gamal Abdel **Nasser** [or Jamal Abd al-**Nasir**]

192-12-73-01130

15. This process involves four main complexes consisting of proteins like succinate (SUCKS-sin-ate) dehydrogenase and cytochrome bc1. Peter Mitchell proposed that this process is at the center of the chemiosmotic (KIM-eye-oz-motic) theory, in which a gradient across the mitochondrial membrane pumps protons, which in turn drives the production of ATP. For 10 points, name this cellular process which involves the movement of a certain negatively charged particle.

ANSWER: **electron transport chain**

064-12-73-01131





2013 VHSL Districts  
Round 1  
Tiebreaker Questions

1. This character claims that she would pluck her nipple from her baby's boneless gums and dash his brains out. She is first introduced musing that a man's nature "is too full o' the milk of human kindness." After being told of this character's death, her husband says, "Life's but a walking shadow." At one point, this character sleepwalks and guiltily screams, "Out, damned spot!" For 10 points, name this Shakespearean character, the wife of a murderous Scottish nobleman.

ANSWER: Lady Macbeth [do not accept or prompt on "Macbeth"]

052-12-73-01132

2. Richard Chancellor visited this man's country during his reign. This leader's abdication led to the accession of Simeon Bekbulatovich (bek-boo-LAH-tov-itch), and he lost the Livonian War to Stephen Bathory. This founder of the oprichnina (op-RICH-ee-nuh) had one of his architects, Postnik Yakovlev, blinded after he designed St. Basil's Cathedral. This member of the Rurik Dynasty was succeeded by Boris Godunov. For 10 points, name this Russian tsar whose nickname reflected his ruthlessness.

ANSWER: Ivan the Terrible [or Ivan IV of Russia; or Ivan Grozny; or Ivan Vasilyevich; prompt on Ivan]

192-12-73-01133

3. The discontinuity between this region and the one above it is sometimes named for Bullen. This region was discovered after seismic waves from a New Zealand earthquake were studied by Inge Lehmann. Since this region helps drive convection in the layer above it, it is partly responsible for the dynamo effect, by which the Earth's magnetic field is produced. For 10 points, name this layer of the earth mostly composed of a solid iron and nickel alloy and surrounded by a liquid, "outer" counterpart.

ANSWER: inner core [prompt on core]

014-12-73-01134

4. This character dies of starvation while lying next to his beloved's corpse, and his bones turn to dust when his skeleton is moved. He is first introduced when being crowned Pope of Fools during a feast. This man is separated from his love by the archer Phoebus, and he falls in love with the gypsy girl Esmeralda. He shouts "Sanctuary!" as he flees to the cathedral where he is the bell-ringer. For 10 points, name this title character from Victor Hugo's novel *The Hunchback of Notre-Dame*.

ANSWER: Quasimodo [prompt on Hunchback of Notre-Dame until it is read]

052-12-73-01135

5. The first self-hosting type of these programs was written in Lisp and created through bootstrapping. One type of these takes in bytecode at runtime; that type is used by Java and .NET (dot net) and is "just-in-time." Because these programs are used before a program is executed, languages that use them often run faster than those using an interpreter. For 10 points, name this programs which translate higher order languages into assembly code.

ANSWER: compilers [or word forms]

121-12-73-01136

This is a calculation question. If you are a farmer with 4 cows, 3 sheep, and 3 chickens, and you pick three animals without replacement, what is the probability that none of them are chickens?

ANSWER: 7/24 [or 210/720]

What predecessor to Mario Monti said he would run again for the Italian premiership with the People of Freedom party?

ANSWER: Silvio **Berlusconi**