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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 14**  **First Period, Fifteen Tossups** |

1. While playing the New York Knicks in the 1994 Eastern Conference Finals, a player on this team stirred controversy by making the choke sign to Spike Lee. This team, the opponent of the Pistons in the "Malice at the Palace" incident, rehired former Celtics star Larry Bird as its club president in 2013. In the 1990s, this team was led by three-point specialist Reggie Miller. For 10 points, name this NBA team whose star player, who broke his leg over the summer in 2014, is Paul George.

ANSWER: **Indiana** Pacers [or Indiana **Pacers**]

2. This quantity is cubed in the denominator of the expression for Rydberg's constant. A reduced form of this quantity is known as Dirac's constant and is equal to it over two pi. Originally proposed in an equation governing blackbody radiation, this constant is denoted h. For 10 points, name this quantity equal to 6.626 times 10 to the power of -34 Joule-seconds, named for a German physicist who proposed quanta.

ANSWER: **Planck**'s constant [or **h** until it is read; do not accept **h-bar**]

3. The founder of this philosophical school argued that one could be happy by employing the “Tetrapharmakos.” This philosophical school’s belief that atoms could “swerve” was elucidated by Lucretius in his *On the Nature of Things.* This school contended that a happy life was characterized by freedom from pain or aponia and a sense of tranquility called ataraxia. For 10 points, name this school of ancient Greek philosophy which advocated a life of pleasure.

ANSWER: **Epicurean**ism

4. The multiplicative group mod n is denoted this letter slash n this letter. The capital version of this letter denotes the set of integers. In a normal distribution, the number of standard deviation's above the mean is this letter's namesake "score." This letter is often used to represent an arbitrary complex number. For 10 points, identify this letter, which represents the altitude when given as the third spatial variable along with x and y.

ANSWER: **z**

5. A monastery on this body of water is notable for being accessible from the mainland during low tide. Mont Saint-Michel lies in this body of water, as do the islands of Guernsey and Jersey. High-speed Eurostar trains run through a tunnel underneath this body of water from Dover to Calais. The River Seine empties into this body of water. For 10 points, name this channel that separates the United Kingdom from France.

ANSWER: **English Channel**

6. A recurring episode in this novel is that of its protagonist bringing her children to a tool shed with a saw in her hand. Set primarily at 124 Bluestone Road, this novel is named after the sister of Howard, Buglar, and Denver. Its protagonist allows Paul D to enter her house, and was once married to Halle, whom she met at Sweet Home plantation. For 10 points, name this novel about the ghost of Sethe’s daughter, which was written by Toni Morrison.

ANSWER: ***Beloved***

7. This ruler backed al-Harith to create a client buffer-state bordering Arabia.. This man's forces won at Ad Decimum against Gelimer's vandals and fought the Goths in Italy under the Armenian eunuch Narses. This man's empire was struck by a namesake plague in 451 CE, which set back reforms overseen by Tribonian. This husband of Theodora employed Belisarius and built the Hagia Sophia. For 10 points, name this Byzantine empire known for his namesake legal code.

ANSWER: **Justinian** I [or **Justinian** the Great]

8. With this deity, Hephaestus fathered a king of Athens named Erichthonius. This goddess's last son, a hundred-handed monster who almost overthrew Zeus, was named Typhon. In the *Theogeny,* this goddess gives birth to Pontus after arising from Chaos. This goddess crafted an adamantine sickle for her youngest son Kronos so that he could castrate his father Ouranos. For 10 points, name this mother of the Titans, who was the Greek personification of the earth.

ANSWER: **Gaia**

9. The severity of the 2008 Myanmar cyclone was in part due to this process applied to coastal mangroves. Like drought and improper agricultural methods, this process is one of the main causes of desertification. This process reduces or eliminates transpiration in a local area, causing the water cycle to be interrupted.The "slash-and-burn" technique is an example of this process that is endangering habitats in South America. For 10 points, name this process that involves the removal of forests and conversion of the land they were on.

ANSWER: **deforestation** [or **defoliation**; or **clearance**; or **clearing**; or word forms; or obvious equivalents, such as the **removal** of **forest**s until it is read]

10. Paulo Freire's major book criticizes the "banking model" of these places, which were reformed and expanded in the U.S. under a movement founded by Horace Mann. John Dewey wrote about bringing democracy to these places, and other people who invented new strategies for use in these places include Friedrich Fröbel and Maria Montessori. For 10 points, identify these places where pedagogy is practiced and which now often begin with pre-kindergarten.

ANSWER: **school**s

11. In the 1960’s, this Cabinet position was held by one of the former “Whiz Kids” working for the Ford Motor Company. During the George H.W. Bush administration, it was held by a future CEO of Halliburton. This position once held by Robert McNamara was held in both the Bush and Obama administrations by Robert Gates. For 10 points, name this Cabinet position held in 2014 by Chuck Hegel, which controls the United States military.

ANSWER: Secretary of **Defense**

12. This composer used a serenade commissioned by Sigmund Haffner as the basis of his thirty-fifth symphony. His twenty-fifth and fortieth symphonies are sometimes called the "little" and "great" G minor symphonies, respectively. This composer’s eleventh piano sonata ends with a rondo titled "Alla Turca." He arranged a set of variations based on the melody to "Twinkle, Twinkle, Little Star." For 10 points, name this Austrian composer of *Eine Kleine Nachtmusik.*

ANSWER: Wolfgang Amadeus **Mozart** [or Johannes Chrysostomus Wolfgangus Theophilus **Mozart**]

13. This organ's head is drained by the ducts of Wirsung and Santorini. Secretin stimulates this organ’s centroacinar cells to produce bicarbonate, which neutralizes chyme. This organ secretes proteases like trypsinogen and chymotrypsinogen in its namesake "juice". It is connected to the duodenum, and alpha and beta cells can be found in its islets of Langerhans. For 10 points, identify this organ that secretes insulin.

ANSWER: **pancreas**

14. Scotsman John Law established the national bank of this country, but was dismissed after overseeing the disastrous Mississippi Bubble. A leading economist from this country used his Economic Table to argue for the value of agriculture and led the Physiocrats. Famous Finance Ministers from this country include Jacques Necker and Jean-Baptiste Colbert. For 10 points, name this European country where the Banque Generale was founded in Paris.

ANSWER: **France**

15. This character agrees to give his host whatever he receives at the castle in exchange for the latter’s prizes at the hunt. He gives Sir Bertilak the kisses he receives from Bertilak’s wife, but withholds the girdle that will supposedly make him invincible. He is the first title character of a Middle English poem by the anonymous Pearl Poet. For 10 points, name this character who participates in a beheading contest with the Green Knight.

ANSWER: Sir **Gawain**

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 14**  **Directed Round** |

1A. What author's characters include Edgar Linton, Nelly Dean, and Catherine Earnshaw? ANSWER: **E**mily **Brontë** [prompt on **Brontë**]

1B. What African city is one of two world capitals to be named for an American president, serving as capital of Liberia?

ANSWER: **Monrovia**

2A. What South American country lost its access to the ocean to Chile in the War of the Pacific?

ANSWER: **Bolivia** [Plurinational State of **Bolivia**] [or Estado Plurinacional de **Bolivia**]

2B. In 1309, Clement V moved the papacy from Rome to what French city, where it remained until 1377?

ANSWER: **Avignon**

3A. This is a 20-second calculation question. What is the area of an isosceles trapezoid with longer base measuring 12 centimeters, shorter base measuring 8 centimeters, and height 4 centimeters?

ANSWER: **40** square centimeters

3B. This is a 20-second calculation question. Assume that men's heights are normally distributed with a mean of 5 feet 10 inches and a standard deviation of 3 inches. How tall is a man whose height can be standardized by a z-score of 2?

ANSWER: **6 feet 4 inches** [or **76 inches**]

4A. What southern state was represented by Blanche K. Bruce and Hiram Revels in the Senate during Reconstruction?

ANSWER: **Mississippi**

4B. Identify the Indian religion that venerates 24 “ford-makers,” or Tirthankaras, including the faith's founder Mahavira.

ANSWER: **Jain**ism

5A. What is the geometry predicted by VSEPR theory for carbon dioxide?

ANSWER: **linear**

5B. What video game series takes place on the planet Sera, and allows the player to play as the leader of the Delta Squad, Marcus Fenix?

ANSWER: ***Gears of War***

6A. What German poet wrote *The Sonnets to Orpheus* and the semi-autobiographial novel *The Notebooks of Malte Laurids Brigge*?

ANSWER: Rainer Maria **Rilke**

6B. What noun, whose Latin roots denote “both” and “strong,” indicates the state of holding two conflicting opinions or feelings, but is often misused to denote indifference?

ANSWER: **ambivalence**

7A. In Latin, what verb mood is formed in the negative by adding the infinitive to "nolo" and normally by removing the "-re" from an infinitive, adding "-te" if plural?

ANSWER: **imperative**

7B. What Hebrew letter was introduced by Cantor to denote the different sizes of infinite sets?

ANSWER: **aleph**

8A. This is a 30-second calculation question. Two consecutive even integers have the property that the sum of the smaller one and three times the larger one is *at most* twice the smaller one. What is the greatest possible value of the smaller of the two integers?

ANSWER: **-4** [do not accept "-3"]

8B. This is a 30-second calculation question. If sine of 126 degrees equals *a*, then what, in terms of *a*, is cosine of 36 degrees?

ANSWER: ***a***

9A. What plant structures have tips with an undifferentiated apical meristem region and allow nutrient and water flow?

ANSWER: **root**s

9B. In what William Faulkner novel is Joe Christmas accused of murdering his lover Joanna Burden?

ANSWER: ***Light in August***

10A. What C minor symphony by Ludwig van Beethoven opens with a four-note motif that is often compared to fate knocking at the door?

ANSWER: Beethoven’s **Fifth** Symphony [or *Symphony No.* ***5***; or ***Schicksalssymphonie***]

10B. What daily publication came under criticism for the abrupt firing of its executive editor Jill Abramson in 2014?

ANSWER: *The* ***New York Times*** [or ***NYT***; prompt on *The* ***Times***]

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 14**  **Third Period, Fifteen Tossups** |

1. This author claimed, “Folly, error, sin, avarice occupy our minds,” in a poem titled “To the Reader.” One of this man’s poems concerns a “winged traveler” who is captured by sailors “to amuse themselves.” The best-known collection by this Symbolist poet of “The Albatross” has sections like “Wine” and “Spleen and Ideal.” For 10 points, name this French poet of *The Flowers of Evil.*

ANSWER: Charles **Baudelaire**

2. The syllabus Lamentabili Sane Exitu defended this act’s practice by quoting John 20:22.The second Precept of the Church dictates the yearly completion of this act, which is accompanied by a prayer which says, “I am heartily sorry for having offended thee.” The Act of Contrition is said right before this sacrament, which is followed by the completion of an assigned penance. For 10 points, name this sacrament in which one tells their sins to a priest to have them forgiven.

ANSWER: **Confession** [or **Reconciliation**; or **Penance** until “penance” is read]

3. This man led the United Opposition alongside Lev Kamenev and Grigori Zinovyev. This man denounced the idea of socialism in one country with his idea of permanent revolution. This man led the troops which turned back Alexander Kerensky’s final attempt to retake Petrograd. After moving to Mexico, this man was killed by an assassin wielding an ice pick. For 10 points, name this prominent Bolshevik and first leader of the Red Army, a chief opponent of Josef Stalin.

ANSWER: Leon **Trotsky** [or Lev Davidovich **Bronshtein**]

4. Upon hearing of this character’s death, a man states that "all our yesterdays have lighted fools the way to dusty death." This character laments that “all the perfumes of Arabia will not make sweet this little hand” while sleepwalking, and cries, “Out, damned spot!” to an imaginary bloodstain. She encourages her husband to kill King Duncan. For 10 points, name this wife of a treacherous King of Scotland in a Shakespeare tragedy.

ANSWER: **Lady Macbeth** [do not accept "Macbeth"]

5. A subdivision of this agency, known as “Federal One”, produced the American Guide Series. This agency was funded by the Emergency Relief Appropriation Act of 1935, and included the Federal Writers Project. It was first headed by Harry Hopkins, and ended in 1943 after spending eleven billion dollars to employ eight million Americans to build infrastructure such as airports, parks, and bridges. For 10 points, name this largest “alphabet agency” of the New Deal.

ANSWER: **WPA** [or **Works Progress Administration**]

6. This quantity for a lens is inversely proportional to its focal length. Intensity is the amount of this quantity delivered per area. For a rotational system, this quantity can be calculated as the dot product of torque and angular velocity. The value of this quantity for a circuit is equal to the current times voltage. Its most basic definition is the work done per unit of time. For 10 points, name this quantity measured in Watts.

ANSWER: **power**

7. This territory is home to the weather station Alert, and its capital was formerly known as Frobisher Bay. Its Dorset culture was found on an island that was given the name of “Helluland” by Norse explorers including Leif Erikson. Most of this territory’s inhabitants speak Inuktitut, and it was created in 1999 from the Northwest Territory. For 10 points, Baffin Island is part of what territory with a majority-Inuit population and capital Iqaluit, in arctic Canada.

ANSWER: **Nunavut**

8. Carl Elias, a mobster on this television show, is betrayed by HR. A corrupt policeman on this show kills Detective Joss Carter. On this show, Decima Technologies introduces Samaritan, a device which rivals a machine created by Howard Finch that provides the Social Security numbers of people who will be involved in a future crime. For 10 points, name this series which stars Jim Caviezel as John Reese, who tries to prevent crimes predicted by the Machine.

ANSWER: ***Person of Interest***

9. This ethnic group supported Selahattin Demirtas of the left-wing feminist party HDP in a 2014 presidential election. They were the main target of the al-Anfal genocide, and were subsequently protected by a northern no-fly zone. Their autonomous region is led by Masoud Barzani, and several Western nations recently pledged to arm their peshmerga fighters. For 10 points, name this ethnic group whose homeland straddles portions of Syria, Iran, Turkey, and northern Iraq.

ANSWER: **Kurd**s

10. Fisher-Johns apparatuses are used to measure this quantity. This quantity equals the enthalpy of fusion divided by the entropy of fusion. This quantity decreases by the product of the cryoscopic constant and the molality of a solution in a common colligative property. Subcooling occurs below this temperature. For water at one atmosphere, this quantity equals 273 Kelvin, or 0 degrees Celsius. For 10 points, name this temperature at which a solid turns to a liquid.

ANSWER: **melting point** [or **freezing point**; or **Tm**; or **Tf**]

11. This artist was by far the most famous pupil of Thomas Couture. While in Spain, this artist depicted a teenage member of the Imperial Guard playing a woodwind instrument. The feet of a trapeze artist are barely visible, and a mirror reflects a waitress, in another painting by this artist, who controversially painted two fully clothed men lounging with a nude woman. For 10 points, name this Frenchman who painted *Olympia,* *A Bar at the Folies-Bergere,* and *Luncheon on the Grass.*

ANSWER: Edouard **Manet**

12. A character in this movie continually changes allegiances in order to save time because he has tickets to the Yankees game. In a climactic scene from this film, the antagonist tears a photograph of his estranged son and begins crying. In this debut film of director Sidney Lumet, the Henry Fonda played protagonist is called "number eight" and attempts to convince his peers that there is room for reasonable doubt. For 10 points, name this film in which a contentious jury debates the verdict of a murder trial.

ANSWER: ***12 Angry Men***

13. One ruler with this name fled the Battle of Fyrisvellir rather than face Eric the Victorious of Sweden, and erected the greater Jelling Stone after Christianizing the Danes. That son of Gorm the Old was known as “Bluetooth.” A Norwegian king with this name, known as “Hardrada,” lost at Stamford Bridge to another man with this name, a son of Godwin of Wessex who took an arrow to the eye battling William the Conqueror. For 10 points, give this name shared by the last Anglo-Saxon king of England who lost at Hastings.

ANSWER: **Harold** [or **Harald**]

14. Maximum parsimony is used to estimate the structure of these entities. The outgroup method is used to root these constructs, and the cladogram form does not illustrate passage of time in its branch length. These constructs illustrate whether a taxon is monophyletic, paraphyletic, or polyphyletic. For 10 points, name these diagrams that depict the evolutionary relationship between taxa and often have nodes representing common ancestors in their namesake trees.

ANSWER: **phylogenetic** trees [or **evolutionary** trees; or **phylogeny**; prompt on **cladogram**s until it is read; prompt on **tree of life**; prompt on **dendrogram**s; prompt on **phylogram**s; prompt on **chronogram**s]

15. In this story, a man in a gray uniform asks for a drink of water and suggests burning a pile of driftwood as a form of sabotage. The protagonist of this story hears the sharp ticking of his watch as he imagines jumping into the water below him. This story begins by describing how a man stood upon a bridge in Alabama. For 10 points, name this story that conveys Peyton Farquhar’s thoughts before being hanged, a work by Ambrose Bierce.

ANSWER: “An **Occurrence at Owl Creek Bridge**”

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| High School Academic Pyramid Questions | **VHSL Scholastic Bowl**  **Regular Season 2014**  **Round 14**  **Tiebreaker/replacement questions** |

1. This author wrote a story in which a farmer named Sonny helps R. J. Bowman pull his car out of a ditch. This author also wrote about Phoenix Jackson, who travels to Natchez to buy medicine for her grandson, who swallowed lye. In another story by this author of “A Worn Path,” Stella-Rondo returns home and persuade Uncle Rondo and Papa-Daddy to turn against the protagonist. For 10 points, name this American author of “Why I Live at the P.O.”

ANSWER: Eudora **Welty**

2. The generating function for these numbers can be represented by a matrix in which the top two terms are one and one and the bottom two are one and zero. These numbers appear as the sum of the shallow diagonals in Pascal's triangle. The ratio of consecutive numbers in this sequence approach the golden ratio. This sequence is known for appearing repeatedly in nature. For 10 points, identify this sequence that computes its next term by adding the two previous terms.

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

3. This god carried a *thyrsus* staff and rode in a chariot pulled by cheetahs. The Athenian festival where tragedies were performed was named after this god. Zeus sewed this god into his thigh after his mother, Semele, died from seeing Zeus in his true form. Satyrs and maenads were followers of this god. For 10 points, name this Greek god of wine.

ANSWER: **Dionysus** [or **Bacchus**; or **Liber**]

4. In a painting by this artist, three infants blow a trumpet in the ear of one of the title deities. Twelve angels hold hands in a circle in the top half of this artist's *Mystical Nativity.* On the left side of another painting by this artist, Mercury stands in the forest next to three Graces. The Uffizi Gallery houses a painting by this artist depicting a goddess standing on a seashell. For 10 points, name this Italian who painted *La Primavera* and *The Birth of Venus.*

ANSWER: Sandro **Botticelli** [or Alessandro di Mariano di Vanni **Filipepi**]

5. Some of these people settled in Constantinople as the Varangian Guard. Charles the Fat paid off these people to leave Paris and attack Burgundy, shortly before their leader Rollo settled them in northern France. These people launched devastating attacks on Iona and Lindisfarne in the 790s. Later, these people were led by Ragnar Hairy-Pants and Ivar the Boneless during their continued raids on European wealth centers. For 10 points, name these Scandinavian pillagers.

ANSWER: **Viking**s [or **Norsemen**]

What Irish novelist and playwright wrote the sentimental novel *The Vicar of Wakefield* and the comedy *She Stoops to Conquer*?

ANSWER: Oliver **Goldsmith**

The number of students who can go on a field trip varies directly with the number of chaperones. When there are 6 chaperones, 90 students can go on the field trip. How many chaperones are needed if 150 students want to go on the field trip?

ANSWER: **10** chaperones