

# NEW TRIER SCOBOL SOLO 2012

## ROUND 9

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1. One attempt to assassinate this leader involved a lute filled with lead that was swung at him but missed. During his reign, his mother was placed under house arrest after her lover and their two sons were killed and his regent committed suicide. His death came from swallowing pills that were supposed to confer immortality but contained mercury. A well-known history of his reign claims that he buried hundreds of scholars alive and burned many books, which led to language standardization and ended the Hundred Schools of Thought. His tomb, found in the 1970s, is surrounded by the Terracotta Army. Name this emperor whose rise to power marked the end of the Warring States Period, considered the first emperor of unified China.

ANSWER: Qin Shi Huang(di) [or Ying Zheng, accept Ch'in; prompt on non-underlined parts of correct answers]

2. In one work by this poet, the speaker is tempted to keep gifts from Mara Mori as schoolboys keep fireflies. In another work, the speaker says that he and his clothes are a single body and that every morning his clothes wait over a chair. This writer of "Ode to My Socks" and "Ode to Clothes" wrote a longer poem that begins "before the wig and the dress coat there were rivers" in the section "A Lamp on Earth". Another poem, written at the hour of departure, follows "Tonight I can write the saddest lines". Name this Chilean poet of *Elemental Odes* and *Twenty Love Poems and a Song of Despair*, who included "The Heights of Macchu Picchu" in his *Canto General* [heh-nair-AHL].

ANSWER: Pablo Neruda [or Neftalí Reyes Basoalto]

3. The Laboulbeniales [lah-bool-ben-yahl-es] order of fungi are parasites that feed exclusively on this anatomic structure, while the simplest organisms to possess this structure are the marine moss animals. The replacement of this structure uses a process called ecdysis [ek-DY-sis], and in terrestrial arthropods it is perforated by spiracles [SPEER-uh-kulz] to permit respiration. In many animals this structure is made of the complex sugar chitin [KY-tihn] and it is notable for being flexible only at the joints. Requiring continual molting and regrowth, name this hard outer covering of crustaceans and insects that support the body and takes the place of bones.

ANSWER: exoskeleton(s) [prompt on shell]

4. Some tests of this include the Minnesota Multiphasic and California F-Scale. This was a central topic to Gordon Allport, who wrote about it in a book subtitled *A psychological interpretation*, and Abraham Maslow wrote about motivation and this. Rigid and unhealthy behaviors are classified as this type of disorder. Another test of this, based on Carl Jung's [YOONG'Z] *Psychological Types* and using dichotomies such as sensing and intuition, is called Myers-Briggs. Specific cases can be classified as borderline, histrionic, or obsessive-compulsive, and hero-worship by a society focused on a leader is called a cult of this. Name this term for the qualities that form an individual's unique behavior.

ANSWER: personality

5. Either this god or his brother the moon god brought about grains for food by killing Uke [oo-kay] Mochi. He created five gods from his sister's necklace, and she created three goddesses from his sword. He married Kushinadahime [hee-may], the last of eight siblings from a family in Izumo, after saving her by slaying the serpent Yamata no Orochi. This god was upset when he was not given control over land, and his tantrum caused his brother to hide in a cave, which caused the world to go dark. He was born from the nose of Izanagi, and his siblings were born from Izanagi's eyes. Name this Shinto god of storms and the sea, the brother of the moon god Tsukuyomi and sun god Amaterasu.

ANSWER: (Take haya) Susano-o (no mikoto)

6. A side agreement to this created the Commission for Environmental Cooperation, some of whose investigations have been over the impact of Chapter 11, which allows investors to sue foreign governments. The day after it went into effect, a Zapatista movement tried to take over Chiapas. Ross Perot warned that this agreement would create a giant sucking sound when jobs left and debated it with Vice President Al Gore. It was signed by Brian Mulroney, Carlos Salinas, and George H. W. Bush, and it started taking effect under President Clinton. Name this agreement that eliminates trade barriers between Canada, Mexico, and the United States.

ANSWER: NAFTA or North American Free Trade Agreement

7. The axiom of this concept states that for any set there exists a set whose elements are the elements of the elements of the first set. The unsorted and usual types of this operation remove repetition from a list, while the discriminated or disjoint type of this create an index giving information about the source of each element. The symmetric difference gives a subset of the result of this operation. When this operation is applied to two sets, the resulting cardinality is at least the higher cardinality of the two original sets and at most the sum of the cardinalities. The inclusion-exclusion principle states that the cardinality of this is the sum of the cardinalities of the inputs, minus the cardinality of the intersection. Name this operation that gives all the elements that are in either or both of the two input sets.

ANSWER: union

8. In this play, the audience is told that Joe Crowell, Jr. will attend MIT and die in France, though in his only appearance he is a paperboy whose knee can predict the weather. Each act features the song "Blessed Be the Tie that Binds", though the third act takes place after the suicide of the choir director Simon Stimson, and each act also shows Howie Newsome delivering milk in the morning. The second act features the wedding of George Gibbs to Emily Webb in a ceremony performed by the Stage Manager. Name this play set in Grover's Corners, New Hampshire written by Thornton Wilder.

ANSWER: Our Town

9. Two-photon excitation microscopy takes advantage of this phenomenon to observe below the surface of living tissue. A dark-ground condenser makes it easier to observe this effect, and, similar to a superconducting magnet, this property is decreased by Förster resonance energy transfer in a process called quenching. The Franck-Condon principle describes absorption and this type of photoluminescence that immediately follows. Mercury vapor often is used in lamps that use this to convert ultraviolet light into visible light, and this is characterized by emitted photons with less energy than the absorbed photons. Name this process that stops quickly when incident radiation is stopped, often contrasted with phosphorescence.

ANSWER: fluorescence [accept word forms; prompt on photoluminescence]

10. One work by this artist shows a woman holding flowers on her birthday while her boyfriend in a green shirt floats above ground and greatly contorts his neck to kiss her. His pictures of himself, which generally show him painting, include *Autoportrait* and *Self-Portrait with Seven Fingers*. Another work shows a red Notre Dame, a cloud that looks like a woman, and, in its upper right corner, an enormous bouquet of flowers. There is debate over whether the appearance of the Russian Red Army in one of his works is supposed to represent hope or danger, and historians also question his decision to cover up that work's Nazi references. Those works are *View of Paris* and *White Crucifixion*. Name this artist who showed a black-clothed man holding a scythe, an upside-down woman, the large face of a goat, and the large face of a green man in *I and the Village*.

ANSWER: Marc (Zaharovich) Chagall

11. In one novel by this author, the narrator—who travels with Joe, David, and Anna—is supposed to illustrate a book of fairy tales but becomes focused on trying to find her father on an island. In another work, Laura dies when her car goes off a bridge, but Laura’s novel about Planet Zycron becomes successful. In addition to that work narrated by Iris Chase, this author wrote a work which retells *The Odyssey* from a female character’s point of view. This author of *Surfacing* and *The Penelopiad* wrote another novel in which a woman is separated from her child and husband Luke when she tries to flee her country. That woman is given the job of having the Commander’s child and given the name Offred. Name this author of *The Blind Assassin* and *The Handmaid’s Tale*.

ANSWER: Margaret (Eleanor) Atwood

12. A misunderstanding in this opera spares the Countess of Ceprano [chehp-RAH-noh] from possible physical harm. The title character of this opera is subjected to a curse by Monterone [mon-tair-OH-nay] at the end of its first act, which opens with one character singing about his success with women in “Questa o quella”. In this opera, Sparafucile [SPAR-ah-FOO-chee-lay] almost kills Maddalena and is prevented from doing so by Gilda’s decision to die instead. In this opera’s most famous aria, the Duke of Mantua laments the fickleness of women; that song is “La donna è mobile”. Name this opera about an Italian jester, composed by Giuseppe Verdi.

ANSWER: Rigoletto

13. In fluids, this quantity can be considered equivalent to energy per volume. If Bernoulli’s principle is expressed with all the terms in distance squared per time squared, this quantity is divided by density, and an increase in this quantity has the same type of impact as an increase in energy. Integrating this with respect to volume gives work, and a calculation of enthalpy involves multiplying this times volume and adding the result to internal energy. This is commonly defined as force per area, and it varies inversely with volume in the ideal gas law. Name this quantity that can be measured in pascals, bars, or atmospheres.

ANSWER: pressure

14. In 2009, this person and Ronald Nielson started the Our America Initiative to encourage discussions on civil liberties and other issues. He was nicknamed “Governor Veto” when he served from 1995 to 2002, at the end of which he was term-limited and succeeded by Bill Richardson. During the Republican Primary, he was only allowed in two debates. After he promised to cut the military budget and overhaul entitlement programs in the first Free and Equal Election Foundation debate, he and Jill Stein were invited to a second debate. Name this former governor of New Mexico, the 2012 presidential candidate of the Libertarian Party.

ANSWER: Gary (Earl) Johnson

15. This leader refused to fire back at a Marine while dueling on the same field where Aaron Burr had died; he had slapped that Marine commander while commanding the USS *Java* during the Second Barbary War. This man and his subordinate Captain Jesse Elliott filed charges of incompetency against each other, leading to a controversy that ended when President Monroe sent this man to South America to meet with Simon Bolívar with a promotion to the rank of Commodore. His younger brother later opened Japan to the West. Identify this American naval leader from the War of 1812, famous for his report to William Henry Harrison regarding the Battle of Lake Erie: “We have met the enemy, and they are ours...”

ANSWER: (Commodore) Oliver Hazard Perry [prompt on Perry]

16. Peano's [pee-AH-no'z] last axiom defines this technique, whose transfinite type can be used to prove that the axiom of choice implies Zorn's lemma. A famous incorrect application of it demonstrates that all horses have the same color, and a version of it that relies on more assumptions is called the strong type. This method can show that a given expression is always divisible by a given number, or it can verify the closed formulas for summing arithmetic and geometric sequences. Name this method of mathematical proof that proves a base case, then proves that if a statement is true for  $n$ , it must be true for  $n+1$ .

ANSWER: proof by induction [or inductive proof]

17. This quantity is expressed in the Gell-Mann-Nishijima formula in terms of baryon number, strangeness, and isospin. There are "hyper" types of this associated with both the strong and weak nuclear forces. The derivative of the density of this quantity with respect to time equals the opposite of the flux of current density. The Faraday constant is equal to the fundamental value of this times Avogadro's constant; that fundamental value was measured by Robert Millikan's oil-drop experiment, and can be divided by three for quarks. Name this quantity that may be positive or negative, measured in coulombs.

ANSWER: electric charge

18. In an incident known as the tragedy of Port St. Julián, this man accused John Doughty of being a witch and executed John's brother Thomas for being a conjurer. He often worked closely with his cousin John Hawkins, including unsuccessful attacks near the end of his life at Las Palmas in the Canary Islands and San Juan, Puerto Rico. He sailed with John Norreys after his successful fighting with Lord Howard of Effingham. On the *Golden Hind*, he led the second circumnavigation of the world while sailing for Elizabeth I. Name this navigator who often antagonized Spain and played a leading role in defeating the Spanish Armada.

ANSWER: Sir Francis Drake

19. This composer wrote his only piano trio after the death of his four-year-old daughter. Arnold Schoenberg is reported to have said that this composer's second and final string quartet "opened the world", and this composer said that that work "represents the turbulence of music in a person who had lost his hearing". He also wrote a series of six symphonic poems starting with *Vyšehrad* [VIH-sheh-raht], or *The High Castle*, and including *From Bohemia's Fields and Groves*. His first string quartet, which premiered with Antonín Dvořák [d'-VAWR-zhahk] on viola, contains polkas in its second movement and is known as *From My Life*. Name this Czech whose six-song cycle *Má vlast* includes "Die Moldau", and who composed the opera *The Bartered Bride*.

ANSWER: Bedřich Smetana

20. At one point in this play, Gonzalo awakens and says "Now, good angels preserve the king." Earlier, Sebastian says that Gonzalo receives comfort like cold porridge. That happens while, along with Alonso and Antonio, they are searching for Ferdinand. Another character tells Ferdinand "I am your wife, if you will marry me; if not, I'll die your maid." Before the action in this play, that woman has not seen any men other than her father and the son of Sycorax, a servant named Caliban. In this play, Ariel assists Miranda and Prospero. Name this Shakespeare play set on an island after a shipwreck.

ANSWER: *The* Tempest

**TB1.** The theme for this invasion was Liszt's *Les Préludes* [lay pray-lood], and during the Nuremberg Trials, it was discovered that Herman Goering's "Green Folder"—or Project Oldenburg—outlined the economic outcome of this event, including the starvation of tens of millions. One of the three targets of this event was an area in modern Azerbaijan. This began on June 22, 1941 even though it had been first written about in a 1925 book in which this was important to the concept of Lebensraum [lee-bens-raom]. Identify this largest military operation of its time, which saw Adolf Hitler break the Molotov—Ribbentrop Pact to attack a nation to the east.

ANSWER: Operation **Barbarossa** [or Case **Barbarossa**; accept answers logically equivalent to the German **invasion of the Soviet Union** or German **invasion of the USSR**; do not accept or prompt on answers mentioning "Russia"]

**TB2.** A now disproven paper by Petrovsky and Landis claimed that a system of two quadratic differential equations could have at most this many limit cycles. Twice-continuously differentiable functions of two variables have this many distinct second-order partial derivatives, and this is the lowest number of dimensions in which the cross product of two vectors is defined. It is the standard deviation of a random variable with variance 9, and—provided they are not collinear—the number of points necessary to define a quadratic function or a plane. Identify this second smallest prime number, which is also the degree of a cubic function.

ANSWER: **3**

**TB3.** This is the month in which the British skipped twelve days when the Gregorian calendar was adopted in 1792. Japan formally signed the surrender aboard the USS *Missouri* in this month, the same month Germany invaded Poland to start World War II. Name this month in which an Al Qaeda destroyed the World Trade Center. This month follows August.

ANSWER: **September**