

New Trier Scobol Solo 2013

Round 2



1. One of this composer's operas includes the song "Libiamo ne' lieti calici" [kah-LEE-chee], a duet sung by Alfredo Germont and the woman he loves. That woman, who later sings "Addio, del passato", is Violetta Valery. Another work by this composer, in which Abigaille becomes queen, features the song "Va, pensiero", which is sometimes called "Chorus of the Hebrew Slaves." In another opera by this composer, Amneris tells the man she loves to confess to treason. That man, Radamès [rah-dah-mayss], has in turn fallen in love with the title character, an Ethiopian princess. Name this composer of *Nabucco*, *La traviata*, and *Aida*.

Answer: Giuseppe (Fortunino Francesco) Verdi

2. The paper explaining this phenomenon begins with a section critical of the theory of blackbody radiation, showing that an integral of energy with respect to volume equals infinity. That problem is solved by assuming that energy "is discontinuously distributed in space." Some of the measurements of this effect, which used to be associated with ultraviolet light, were made by Philipp Lenard, who discovered that light intensity did not impact the amount of voltage required to stop rays produced by light striking metal. Name this effect explained when the Planck hypothesis was applied by Albert Einstein, leading to Einstein's Nobel Prize.

Answer: photoelectric effect

3. This politician, whose sister Dorothy was the wife of Lord Townshend, became known as the Screen-Master General because he hid scandals. While serving as First Lord of the Treasury, this person gave the power to Lord Chamberlain to approve stage plays by passing the Licensing Act of 1737. That came after this person was satirized by John Gay and Jonathan Swift. This statesman rose to power after the collapse of the South Sea Bubble. He was the longest-serving British prime minister, serving under George I and George II. Name this first prime minister of Britain.

Answer: Robert Walpole

4. This character briefly worked as a linotypist, and he saved his granddaughter Judy from drowning after their boat capsized. He lived for a time with Jill and her convict boyfriend Skeeter, and he also ran a Toyota dealership. Earlier, this character ran away from his wife Janice, whom he later blamed for the death of his infant daughter Rebecca. He engaged in an affair with his daughter-in-law Pru in the last novel he appeared in, and he was *Remembered* in a novel after that. Name this former basketball player, the title character of five novels by John Updike.

Answer: Harry "Rabbit" Angstrom [accept any underlined name]

5. This country's brief experiment in democracy featured Communist factions called the Khalq and the Parcham, and ended when its monarchy was overthrown in 1973. In the 18th century, a predecessor empire of this country was formed by a leader now buried near the Shrine of the Cloak, Ahmad Shah Durrani. Until he was assassinated in 2001, Ahmad Shah Massoud [mahs-SOOD] supported the United Islamic Front, or Northern Alliance, in this country, and he had previously opposed the Soviet invasion that started in 1979. Name this country headed by Mohammed Omar of the Taliban until the U.S. invaded it in 2001.

Answer: (Islamic Republic of) **Afghanistan**

6. The mirror in this painting is between hanging rosary beads and a whisk broom, and it is surrounded by ten medallions showing the life of Jesus. That mirror is below the artist's signature, which states in Latin that the artist was there. This work shows Giovanna Cenami [joh-VAHN-nah chay-NAH-mee] wearing a green dress with white fur, standing next to a red bed. This work was set in Bruges [broozh], Netherlands in 1434, and this is one of the first famous works to use oil paints rather than tempera, following the same artist's *Ghent Altarpiece*. The top of this work has a chandelier with only one candle. Name this double portrait of a bride and groom by Jan Van Eyck [yahn vahn "IKE"].

Answer: *The **Arnolfini Marriage*** [accept *The **Arnolfini Wedding*** or any answer with **Arnolfini** and the suggestion of marriage; accept *The **Arnolfini Double Portrait***]

7. Some traditions begin this holiday a day early by commemorating the milking of the Earth in the form of a cow. The drawing of small footprints and buying of silver jewelry characterize its first day, and courtyards are decorated with colorful grains and powders arranged in floral patterns in preparation for this holiday. On its fifth and final day, brothers dine at the homes of their sisters, and this holiday welcomes the goddess of wealth during the autumn month of Ashvin. This holiday commemorates Lakshmi by illuminating rows of wooden lanterns and oil lamps. Name this Hindu festival of lights.

Answer: **Diwali** or **Deepavali**

8. In this work, a merchant from Smyrna invites the narrator to have lunch at the Cannon Street Hotel. This poem's first stanza claims "Winter kept us warm, covering Earth in forgetful snow." This poem concludes with words meaning 'give, sympathize, control' taken from one of the Upanishads [oo-PAH-nee-shahds]. The epigraph to this work comes from Petronius's *Satyricon* and tells of the Cumaean [KYOO-may-UN] Sibyl's wish for death. This poem's final section, "What the Thunder Said", ends with the mantra "Shantih shantih shantih", while this work opens by claiming "April is the cruellest month." Name this poem by T. S. Eliot.

Answer: "The **Waste Land**"

9. The quintom scenario explains this phenomenon's equation of state, and this influences the cosmic microwave background through the integrated Sachs-Wolfe effect. The coincidence problem asks when this phenomenon began to affect the universe. In 1998, Adam Riess gathered the first evidence of this phenomenon by showing that type Ia ["one A"] supernovae appeared fainter than predicted. The cosmological constant has been reintroduced to account for the acceleration caused by this phenomenon that accounts for two-thirds of all mass-energy. Name this form of energy named for being difficult to observe directly.

Answer: **dark energy** [do not accept "dark matter"]

10. The shore of this body of water holds Tekkeköy Caves dating from the Stone Age in what is now Samsun Province. This body of water's east coast was the home of the Kingdom of Colchis [KOL-kis]. On its west coast, this connects to Lake Beloslav through Lake Varna. This body's northwestern ports are Illichivsk and Odessa, and in the northeast this is connected by the Kerch Strait to the Sea of Azov. Its north coast includes Yalta and Sevastapol on the Crimean Peninsula. To its southwest, the Bosphorus connects this body of water to the Sea of Marmara. Name this sea surrounded by Ukraine, Russia, Georgia, Bulgaria, Romania, and Turkey.

Answer: **Black** Sea

11. Near the end of this novel, an officer says "I know. Jolly good show. Like the Coral Island." In one scene in this novel, Roger and Maurice destroy a sand castle, and one character camouflages his face with charcoal before hunting a pig. Two characters in this work find a downed pilot whom they claim to be a beast, which Simon finds to be false. Those two characters are twins who become known together as "Samneric" ["Sam 'n' Eric"]. In this work, the conch shell is broken when Piggy is crushed by a boulder. Name this work about English schoolboys alone on an island, written by William Golding.

Answer: ***Lord of the Flies***

12. Two methods for calculating this value are Dodgson condensation and cofactor expansion. This value equals zero when a homogeneous equation has a nontrivial solution. This value gives the ratio of the area of a shape after a linear transformation to the original area. This is evaluated to find a characteristic equation, which is solved to find eigenvalues. Two of these values are divided to solve a system of equations using Cramer's Rule. This is the product of main diagonal values for a triangular matrix. Name this value for a square matrix sometimes given by the formula $ad - bc$ ["a times d minus b times c"].

Answer: **determinants**

13. Before climate scientist Michael Mann moved to Penn State, he taught at a university in this state, whose attorney general has attempted to access his communications. The governor of this state is under investigation for accepting gifts from Jonnie Williams of Star Scientific. This is the home state of House Majority Leader Eric Cantor, and it featured a close attorney general election in 2013 between Mark Herring and Mark Obenshain. Name this state where Bob McDonnell will soon be replaced as governor by Terry McAuliffe, who narrowly won the election over Attorney General Ken Cuccinelli [KOO-chuh-NEL-lee].

Answer: (Commonwealth of) **Virginia**

14. In one work by this author, Adam Krug's son is mistakenly killed by the government. This author also wrote the fictionalized autobiography *Look at the Harlequins!* Another work by this author features references to a fictional King Charles by Charles Kinbote, which appear in the title poem written by John Shade. One of his characters dies of typhus on Corfu; that woman, Annabel Leigh, appears in a novel whose protagonist murders Clare Quilty for abducting the title nymphet, Dolores Haze. Name this Russian-American author of *Bend Sinister* and *Pale Fire* who wrote of Humbert Humbert in *Lolita*.

Answer: Vladimir **Nabokov**

15. The alpha and beta types of this reaction take place in peroxisomes [pur-"OX"-ih-sohmz] and remove a carboxyl [kahr-BAHK-sil] group from a fatty acid to form pristanic acid and then acetyl-coA [uh-SEE-tul KOH-ay]. This type of reaction is used with the Bessemer process to remove impurities. Persulfate is a good agent of this type of reaction, as are the halogens due to their high electronegativity; such agents, as opposed to the reactants, are electron acceptors. In this reaction, electrons are removed from an atom or molecule, often by adding this reaction's namesake element. Name this reaction that often takes place at the same time as reduction.

Answer: **oxidation** [accept word forms; prompt on **redox** or **oxidation-reduction**; do not accept "reduction"]

16. This leader burned several temples to the ground after making an agreement with a group of monks to return them to their "original state". This leader filled in the moats of a rival's castle he had besieged, and then used his rival's excavation of the moats as a pretext for attacking that castle at Osaka. At an earlier battle, this leader gained the allegiance of Kobayakawa Hideaki and defeated the forces of Ishida Mitsunari. Name this third great unifier of Japan, whose victory at the Battle of Sekigahara led him to establish a namesake shogunate ended by the Meiji Restoration.

Answer: **Tokugawa** Ieyasu [accept in either order; accept **Tosho Daigongen**; accept **Matsudaira** Takechiyo]

17. An FDA decision is pending on the use of this organism in Mutaflor therapy. Since 1988 this organism has been studied at a Michigan State University lab where it evolved the ability to use citrate as an energy source. The Meselson-Stahl experiment proved that DNA replication is semiconservative using this organism, and Joshua Lederberg discovered its conjugation mechanism of gene exchange. Humans depend on this organism to produce vitamin K in the colon, though its O157:H7 [“O one five seven H seven”] strain can cause deadly food poisoning, such as in contaminated spinach in 2006. Name this rod-shaped gut bacteria, the most important model organism of molecular genetics.

Answer: *Escherichia coli*

18. This incident led to a Supreme Court ruling upholding the arrest of the brother of the attorney general. The resolution authorizing an investigation into this incident was written by Senator Robert La Follette. Thomas Walsh, who headed that investigation, demanded the resignation of Secretary of the Navy Edwin Denby. This was sometimes called the Elk Hills scandal because Pan American Petroleum was given the rights to that oil field without bidding. Name this scandal in which Interior Secretary Albert Fall favored oil companies that had bribed him, scandalizing President Harding’s administration.

Answer: **Teapot Dome** scandal [accept **Oil Reserves** Scandal before “oil”; accept **Elk Hills** scandal before it is mentioned]

19. The ability of an industry with this condition to bring this condition to other industries is known as Baxter’s law. The Pacman conjecture and Coase conjecture are competing theories about whether or not price competition exists under this condition that can be created by patents. There is often political debate over the existence of what are called “natural” types of these for companies such as utilities, and an important court case on this subject was *United States v. AT&T*. Name this situation that exists when there is only one seller of a particular good.

Answer: **monopoly**/ies

20. One composition from this country, dedicated to its armed forces, was named *Sinfonietta*. A composer from this country traveled to Spillville, Iowa, where he composed his *String Quartet in F*. Another string quartet produced by a composer from this country was subtitled *From My Life*. That composer is also famous for a set of six symphonic poems depicting parts of this country named *Ma Vlast*. The most famous composer from this country was influenced by African American spirituals to compose his *From the New World* Symphony. Name this home of Leoš Janáček [leh-OSH YAH-nah-chek], Bedřich Smetana [BED-reek SMEH-tah-nah] and Antonín Dvořák [AHN-toh-neen d’-VOR-zhahk].

Answer: **Czech Republic** [or **Czechoslovakia**]

TB. One leader of this empire had his half brother Urco assassinated, and defeated an invasion of Chancas led by Uscovilca [oos-koh-VEEL-kah]. A conflict within this empire climaxed at the Battle of Quipaipan [kee-“PIE”-pahn] some three years after Ninan Cuyochi and Huayna Cápac [hWAY-nah KAH-pahk] died of disease. A later ruler of this empire was captured at the Battle of Cajamarca [kah-hah-MAR-kah] after defeating his half-brother Huáscar [hWAHS-kar] in a civil war; that ruler offered to buy his freedom with a room full of gold. Name this South American empire whose leader Atahualpa was disposed of by Spanish conquistadors under Francisco Pizarro in what is now Peru.

Answer: **Inca**(n) Empire [or **Tawantinsuyu**]

TB. This person’s attempts to explain bright spots in the sky led him to state that there is a giant ring of ice in the atmosphere, though he later correctly explained the phenomenon using ice crystals. One of his works explains that an intellect, as opposed to just senses or imagination, is required to understand what a piece of wax is. He wrote that he would not just accept what others had written, and his most famous statement is an attempt to say something that cannot be doubted. Name this philosopher who wrote *Discourse on the Method* and *Meditations on First Philosophy*, works which both claim “I think, therefore I am.”

Answer: René **Descartes** [or Renatus **Cartesius**]

TB. Identify the color that is found in the name of an extremely dense star with mass below the Chandrasekhar limit, describes the non-red factions of both the Wars of the Roses and the Russian Civil War, and is the traditional color for a flag of surrender.

Answer: **white**