New Trier Scobol Solo 2012
Round 14
Questions written and edited by David Reinstein
with Sam Donow, Tom Egan, Mark Grant, Jonah Greenthal, Tanay Kothari, and Mike Laudermith

1. This image appears in Andy Warhol's *Thirty are Better than One*, and Salvador Dalí painted a self-portrait as this. Recent theories about it claim that its background references a flood of the Trebbia River that had occurred in the town of Bobbio. Marcel Duchamp [doo-shahm] took a cheap copy of this work and added masculine features to create his *L.H.O.O.Q.* [el ahsh oh oh koo]. There is debate as to whether or not the subject of this work originally had eyebrows and eyelashes that have been washed away over time, and the bottom of this work shows the subject's right hand resting on her left wrist. Name this early 16th-century portrait of the wife of Francesco del Giocondo, painted by Leonardo da Vinci.
ANSWER: The **Mona Lisa** [accept La **Gioconda** or La **Joconde** before "Giocondo"; accept *Portrait of* **Lisa Gherardini**(, *wife of Francesco del Giocondo*)]

2. According to some stories, this creature made its appearance after the kidnapping and raping of the boy Chrysippus. It positioned itself on a rock and killed travelers entering or leaving a town, and it eventually either ate itself or jumped off a high cliff. Though there is some confusion over who gave birth to this creature, it probably had the same parents as the Nemean lion. It may have been fathered by Orthrus, but it also—like many creatures—could have been the offspring of Echidna [eh-KID-nuh] and Typhon. It supposedly did its damage while Creon was in charge of Thebes [THEEBZ], but it killed itself after a confrontation with Oedipus. Sometimes portrayed with wings and having the head of a cat or person and body of a lion, name this figure which asked a riddle about a creature that walks on four legs, two legs, and then three legs.
ANSWER: **sphinx**

3. An inconsistency between Newtonian restitution and a common model of this phenomenon was known as the Painlevé [pawn-luh-veh] paradox. The velocity named for this concept, also known as shear velocity, is used in the Bagnold formula. This is mapped in chemical force microscopy, a type of atomic force microscopy. Some of its qualities are covered by laws named after Amontons [ah-mohn-tohn] and Coulomb, such as its independence of area and speed, and the magnitude of this force is proportional to the normal force. It may be classified as static or kinetic. Name this resistive force that slows down objects.
ANSWER: **friction**(al force)

4. A massacre took place in this country in 1520 when Archbishop Gustavus Trolle assisted Denmark's King Christian II, and three years later it was united by Gustav Vasa. In 1905, Oscar II remained the king of this country when it had a peaceful dissolution with a neighbor, and this country remains under the House of Bernadotte. This country's Charles XII was weakened when Russia's Peter the Great put together a coalition against them in the Great Northern War. That came about fifty years after the Peace of Westphalia strengthened this country's position in Europe following the successes of Gustavus Adolphus. Name this Scandinavian country that in 1905 broke its union with Norway.
ANSWER: Kingdom of **Sweden** [or Konungariket **Sverige**]

5. This author wrote about a woman who renounces her father to live with her Aunt Maud Manningham Lowder; that woman is secretly engaged to Merton Densher, who is loved by a wealthy American named Milly Theale. In another work, this author wrote about a woman who—after the death of her father—visits her Aunt Lydia Touchett and then marries Gilbert Osmond. In another work, a governess learns of a relationship between the deceased Miss Jessel and Peter Quint while caring for Miles and Flora. Name this author who wrote about Kate Croy in *The Wings of the Dove*, Isabel Archer in *The Portrait of a Lady*, and Mrs. Grose in *The Turn of the Screw*.
ANSWER: Henry **James**

6. This Canadian province had Easter Riots against conscription in 1918 and to a lesser extent during World War II. It was the site of the kidnapping of two government officials in 1970 during its October Crisis. Most of it overlaps what was known as Lower Canada, though its borders included much of the midwestern United States and guaranteed freedom to practice Catholicism after its namesake Act in 1774. During the Seven Years' War, it was the site of the Battle of the Plains of Abraham. During the second half of the 20th century, there was much discussion over its Quiet Revolution, and many of its residents wanted to separate from Canada. Name this province now recognized as a nation within a united Canada that is distinguished by its embrace of French culture and whose most populous city is Montreal.
ANSWER: **Quebec**

7. The only concerto by Jean Sibelius is for this instrument; that work was dedicated to Willy Burmester and has been performed by Jascha [YAH-shah] Heifetz. It is the lead instrument in Berg's Concerto "To the memory of an angel" and Mozart's "Turkish Concerto". Béla Bartók's sonata for a solo of this instrument was written for Yehudi Menuhin, and Édouard Lalo's *Symphonie espagnole*—which can be considered a concerto for this instrument—was dedicated to Pablo de Sarasate. This instrument plays a series of twenty-four pieces written from 1802 to 1817, a set of caprices by a virtuoso of this instrument, Niccolò Paganini. Name this instrument performed on the *Schindler's List* soundtrack by Itzhak Perlman, who uses a Stradivarius.
ANSWER: **violin**

8. Holditch's Theorem generates a second shape by sliding around one of these, and Bertrand's [bair-trawn'z] problem is about the distribution of the lengths of one of these compared to a triangle's sides. When an angle is bisected to create three of these, the sum of the lengths of the outside two equals twice the cosine of the half angle times the length of the middle one in the lemma named for three of these. When one of these splits another segment, part of the other segment is called a sagitta. One of these splits a sector into an isosceles triangle and a circular segment. The length of one of them can be calculated using the Pythagorean theorem given the lengths of an apothem [uh-PAH-thum] and a radius. Name these segments that connect two points on a shape, particularly one that has two endpoints on a circle.
ANSWER: **chord**s [prompt on **segment**]

9. One novel from this country, about an entomologist who is trapped by villagers with a widow and forced to dig sand, is *The Woman in the Dunes*. Another novel from this country is about a ballet expert who travels to a city known for its hot springs. A novel about a cat that walks into the home of Mr. Sneeze is titled *I Am a Cat*, and one of its novelists wrote about lost cats in both *Kafka on the Shore* and *The Wind-Up Bird Chronicle*. In addition to *Snow Country*, this country is the source of an 11th century story about the son of an emperor who marries Lady Aoi. Name this country where Murasaki Shikibu is believed to have written *The Tale of Genji*.
ANSWER: **Japan**

10. This compound reacts with acetic [uh-SEE-tik] acid to form a compound that can then be combined with acetic acid to form a common buffer. This and ammonium chloride are created directly by exposing a solution of brine to ammonia and then carbon dioxide. This compound is then calcinated to produce several gases and soda ash to finish off the Solvay process. Also known as thermokalite or nahcolite, it is used as a toothpaste whitener, as a leavening agent, and in fire extinguishers. Name this compound with chemical formula $NaHCO_3$.
ANSWER: **sodium bicarbonate** or **sodium hydrogen carbonate** [accept **$NaHCO_3$** before the end; accept **bicarbonate of soda**; prompt on **baking soda**, **bread soda**, **cooking soda**; do not accept or prompt on "sodium carbonate"]

11. One work by this poet begins with the speaker picking laurels because his friend drowned in the Irish Sea. Another work ends with the protagonist returning home after having avoided temptation, unlike the two protagonists in an earlier work, who are expelled from their home after giving in to temptation. That later work was published with a play combining Greek tragedy with a subject from the Book of Judges. This poet who wrote *Lycidas* and *Samson Agonistes* began his most famous work with the phrase "Of man's first disobedience, and the fruit of that forbidden tree". Name this 17th-century English poet who wrote *Paradise Regained* and *Paradise Lost*.
ANSWER: John **Milton**

12. During this war, a loss by General Stackelberg preceded a hasty retreat by General Keller at Motien Pass. It started with a surprise attack made while Admiral Stark was throwing his wife a birthday party; Stark was blamed for the mixed results at that battle. *Mikasa* was the flagship in the first battle using wireless telegraphy, during which Oskar Enkvist fled to Manila and Nikolai Nebogatov was taken prisoner. Its last land battle, at Mukden, was a decisive loss for General Kuropatkin, and other major fighting in this war took place at Tsushima and Port Arthur. Name this war ended by the Treaty of Portsmouth in 1905, whose negotiation led to a Nobel Peace Prize for Teddy Roosevelt.
ANSWER: **Russo-Japan**ese War

13. A chemical from this functional group is combined with a carboxylic acid in Fischer esterification. While secondary ones can be oxidized to make ketones, primary ones are oxidized to create aldehydes or carboxylic acids. They are often combined with water to create antifreeze, and are sometimes used before iodine as an antiseptic. Structurally, these contain a hydroxyl group bonded to a saturated carbon, and the simplest one has formula CH_3OH. Including menthol and ethanol, name these compounds known for their use in adult beverages.
ANSWER: **alcohol**s

14. This writer stated the best way to pay for war is compulsory saving, which is equivalent to deferred pay, since wars often result in inflation. He also wrote that the economic problem would be solved within one hundred years, depriving mankind of its traditional purpose. Those ideas appear in *How to Pay for the War* and *Economic Possibilities for our Grandchildren*. Another book, which stated that the classical theory of economics is applicable to a special case and is disastrous when applied, addresses the propensity to consume and states that the spender of last resort should be the government. Name this economist who advocated suppressing inflation with government cuts and curbing recessions with government spending in *The General Theory of Employment, Interest and Money*.
ANSWER: John Maynard **Keynes** ["Canes"]

15. This play ends with a clown singing "Our play is done, and we'll strive to please you every day." It begins with the statement "If music be the food of love, play on." One of the characters mourns for her brother and has stated that nobody will see her face for seven years. In this play, she lives with her uncle Sir Toby Belch, who is a close friend of Sir Andrew Aguecheek. The central character, who arrives in Illyria and pretends to be a boy named Cesario [cheh-SAR-ee-oh], attracts the interest of Olivia while herself being interested in Orsino. Name this Shakespeare play about Viola subtitled *What You Will*.
ANSWER: *__Twelfth Night__(, Or What You Will)*

16. One of this nation's most prominent 20th-century sculptors created a colorful mosaic statue called *Woman and Bird*. This nation is the setting of Wagner's [VAHG-nur'z] opera *Parsifal* and is home to soprano Montserrat Caballé. A cathedral in this nation will feature a prominent Glory Façade and has taken over 130 years to build. This nation is home to two of the Three Tenors, and it partially titles a jazz album by Miles Davis based on Joaquin Rodrigo's *Concierto de Aranjuez*. Name this nation that is home to opera singer Placido Domingo and architect Antoni Gaudí, whose work can be found in Barcelona.
ANSWER: (Kingdom of) __Spain__ [or (Reino de) __España__]

17. The living fossil plant *Welwitschia* [wel-WIT-shee-uh] is native to this biome, whose preserved packrat nests are an important record of biodiversity. This biome is home to many xerophytes [ZEER-oh-fyts] that use the CAM pathway of photosynthesis as well as several mammal species with very large ears. Nearly all small animals in this biome are burrowers and nocturnal, and among its North America species are the creosote bush, roadrunner, and gila monster. Defined by having little vegetation as a result of low precipitation, name this biome that supports the camel and the cactus.
ANSWER: __desert__

18. In this country, the Kaiabi people currently live in Xingu National Park, which was explored by Percy Fawcett and is located in the state of Mato Grosso. In 1989, its state of Goiás split, with the northern half becoming Tocantins, which then constructed its capital at Palmas. Its Florianópolis is located partially on the Island of Santa Catarina. One of its cities contains Corcovado and Sugarloaf Mountains, the former of which has a giant statue of Christ the Redeemer. This country also contains the most populous city in the Western Hemisphere in addition to most of its longest river. Name this largest country of South America.
ANSWER: Federative Republic of __Brazil__ [or República Federativa do __Brasil__]

19. One branch of mathematics with this name uses alpha conversion, beta reduction, and nu conversion. That system, developed by Stephen Kleene and Alonzo Church, is also named for the abstraction operator lambda. Another branch of mathematics with this name, also called vector analysis, uses the del operator to represent the curl and divergence operators. That branch also uses the Frenet–Serret [freh-nay sair-ay] formulas to relate the binormal, normal, and tangent vectors. The best known branch of mathematics with this name uses limits to define its central concepts. Name this branch of mathematics that uses integrals and derivatives.
ANSWER: __calculus__ [accept __lambda calculus__ or __vector calculus__ or __multivariable calculus__ or __differential calculus__ or __integral calculus__]

20. This company came out of the Maxwell-Chalmers company in the 1920s. Thanks to the connections held by one of its chairs, K. T. Keller, it designed the PGM-11 Redstone ballistic missile and then the Jupiter C rocket. In 1979, the US government gave it loan guarantees, allowing it to stay in business under the leadership of Lee Iacocca ["eye"-uh-KOH-kah], who oversaw its production of K-cars. It recently has been controlled by Fiat, the United Auto Workers, and a German car company. Ram, Jeep, and Dodge are brands of what car company that for a time was merged with Daimler?
ANSWER: **Chrysler**

TB1. Some of the early thinkers associated with this practice within Buddhism are Asanga and Vasubandhu, and within Buddhism it is associated with eight consciousnesses. The founder of this school defined it as the cessation of agitation of the mind, and he made it the foundation of one of the six orthodox schools of Hinduism. That founder, who developed the Raja, or Ashtanga, type is Patanjali. Other ancient forms of this include karma, bhakti, and jnana, and its name is derived from the Sanskrit word for "join" or "unite", which may be a reference to the joining of *atman* to *brahman*, or consciousness to divinity. Give this practice which can be considered a form of meditation involving several asanas, or body positions.
ANSWER: **yoga**(cara) [prompt on **meditation** or similar answers]

TB2. This state contains Driskill Mountain near its town of Bryceland. It borders Weeks Bay, which is an arm of Vermillion Bay, and one of its islands, named Last Island, was destroyed by a hurricane. Its senators are Mary Landrieu and David Vitter, and its governor is Bobby Jindal. Its capital contains Myrtles Plantation and has a French name that means "red stick". Its most populous city, located on Lake Pontchartrain, was greatly damaged by Hurricane Katrina. Name this state, the home of Baton Rouge and New Orleans.
ANSWER: **Louisiana**

TB3. This is the day of the week on which the Eastern Orthodox Church commemorates angels. The Bangles called it manic, and the Boomtown Rats asked why they don't like it. Veterans Day is always on this day of the week. Name this second day of the week and first day of the work week named for the Moon.
ANSWER: **Monday**