

NEW TRIER SCOBOL SOLO 2011

ROUND 9

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1. The quotient of these constructs can be defined using quaternions (kwa-TER-nee-uhns), and a linearly independent collection of these objects that spans a space forms a basis. These have tensor rank one, and operators named after these—also called differential operators—are represented by the del symbol. A triple product combining three of these is used to find the volume of a parallelepiped (paar-uh-LEL-luh-pai-ped); that triple product combines the two common methods of their multiplication, one of which is anticommutative and the other of which outputs a real number. Name these entities combined using dot or cross products, which represent a magnitude and a direction.

ANSWER: vectors

2. During one debate, this Presidential candidate challenged Mitt Romney to list his 59 point plan, and his campaign recently gave money to an organization called T.H.E. New Voice. He has stated that communities have the right to ban mosques and that he would require Muslims to take loyalty oaths before serving in his Cabinet. This man now claims that he was joking when he proposed a sign saying "It will kill you — Warning" on an electrified border fence. He served as chairman of the board of directors of the Federal Reserve Bank of Kansas City, and he recently told Occupy Wall Street protesters, "If you're not rich, blame yourself." His economic plan includes a national sales tax. Name this businessman who wants to reform the tax code with a "nine-nine-nine" plan who was the president of Godfather's Pizza.

ANSWER: Herman Cain

3. One character in this play tells a liar that he will be, "condemned into everlasting redemption." That character repeatedly gives strange advice to the two watchmen he oversees and to Verges. In this play, that character finds out that Borachio was paid money to spread a rumor about another character, using his honest girlfriend Margaret to do so. This play is set in Messina, the character in charge of the watchmen is Dogberry, and the couple originally fooled is Claudio and Hero. Name this Shakespeare play in which Don John is jealous of Don Pedro and in which Benedick marries Beatrice.

ANSWER: Much Ado About Nothing

4. The domesticated golden hamster has been subject to this principle since 1930, and Wright-Fisher is the standard mathematical model of it. The high incidence of deafness on Martha's Vineyard is attributed to this principle, which Motoo Kimura argued has a more significant role in evolution than natural selection. The extremely low genetic variation among African cheetahs can be explained by the bottleneck type of this principle, which also applies to the prevalence of polydactyly (lah-lee-DAAK-tih-lee) among Pennsylvania's Old Order Amish whose founding population was quite small. Exacerbated by inbreeding, name this concept, the change in gene frequencies in a small population due to random chance.

ANSWER: genetic drift [accept allelic drift; prompt on bottleneck effect before "bottleneck"; prompt on founder effect before "founding"]

5. This leader traveled on the SMS *Novara* just before taking power, and his body traveled on it a few months after he was killed so that he could be buried in the Imperial Crypt in Vienna. This person was married to Leopold the Second's sister Charlotte of Belgium, and they adopted Agustín de Iturbide (ee-tur-BEE-day) y Green. This leader did not get the support of his brother Emperor Franz Josef the First of Austria, and he was saddled with debts by Napoleon III, who withdrew troop support two years after helping to install this person in power. This leader was eventually overthrown by Porfirio Diaz (por-"fear"-ee-oh DEE-ahz) and Benito Juárez (beh-NEE-toh WAW-rez). Name this Mexican Emperor.

ANSWER: Emperor Maximilian the First of Mexico

6. This poet wrote a poem celebrating the marriages of Elizabeth and Katherine Somerset titled *Prothalamion* (pro-thuh-LAY-mee-on), and he celebrated his own courtship and marriage with a cycle of poems titled *Amoretti*. This poet wrote the line, "A gentle Knight was pricking on the plain," in a work containing *The Legend of the Knight of the Red Cross*. That work, starting with Holiness, is based on twelve virtues, though only six of its twelve books were completed. Name this author of many sonnets who near the end of the sixteenth century wrote an allegorical work praising Queen Elizabeth titled *The Faerie Queene*.

ANSWER: Edmund Spenser

7. This musician headed the Hot Five, which featured his wife Lil Hardin on piano. That group expanded into the Hot Seven and recorded his song "Potato Head Blues". He worked with Duke Ellington on the albums *Together For The First Time* and *The Great Reunion*, which were combined to make *The Great Summit*. He appeared in and recorded the title song for Barbra Streisand's film *Hello, Dolly!* and he made the first and most successful recording of "What A Wonderful World". Name this cornet- and trumpet- playing musician whose nickname, derived from his ever present wide smile, was often shortened from "Satchelmouth" to "Satchmo".

ANSWER: Louis (Daniel) "Louie" Armstrong

8. Two of the Frenchmen who died at this battle were Louis the First, Count of Flanders, and Louis the Second, Count of Blois. This battle began on orders from Philip the Fortunate, who at its end retreated to a castle at Broye (brwah). One of the people who died in this battle, who insisted on fighting even though he had been blind for ten years, was John of Bohemia. One of its victors, who was sixteen years old at the time, was Edward of Woodstock, who is now known as Edward the Black Prince. The French sealed their defeat in this battle from the beginning when they refused to call up the shield bearers for the Genoese crossbowmen. Identify this 1346 battle of the Hundred Years' War in which the French army was decimated by the English longbow, a precursor to the English siege of Calais (kaa-LAY).

ANSWER: Battle of Crécy

9. Serge Haroche has recently used an electromagnetic cavity to trap these particles, and one of these items escapes in the Einstein's box thought experiment. The existence of the momentum of these particles was demonstrated by Arthur Compton, and these particles are often created by low-energy particle-antiparticle annihilation. These elementary particles mediate the electromagnetic force and are used to explain the photoelectric effect. Name these objects used to explain the particle nature of light.

ANSWER: photons [prompt x-ray(s)]

10. In a satire on Georg Hegel, this writer wrote a work subtitled *A Mimical-Pathetical-Dialectical Compilation, An Existential Contribution*. Near the end of this writer's life, he wrote *This Must Be Said, So Let It Be Said* and *Christ's Judgement on Official Christianity*, claiming that he is not a Christian. A book by this writer describes aesthetic pleasure in its first half and then argues that ethics is more important than aesthetics in its second half. Another book by this writer gives four retellings of Abraham killing Isaac. Name this philosopher who used pseudonyms such as Johannes Climacus and wrote *Either/Or* and *Fear and Trembling*.

ANSWER: Søren (Aabye) Kierkegaard

11. This character was suspected by the homosexuals of being a Communist and suspected by the Communists of being a homosexual. He lived with five FBI agents and a Scottish terrier after leaving home, where his father was paid to not grow alfalfa. This character spends much of his life apologizing for not being Henry Fonda, and his mother passed away when she enrolled him in Kindergarten and discovered that his name was not Caleb. He is assisted by Sergeant Towser and promoted to squadron commander by Colonel Cathcart, and he is told, "I'm not ashamed, I'm just afraid," by Yossarian. Name this character from Joseph Heller's *Catch-22* whose name is a joke played by his father.

ANSWER: (Major) Major Major Major [accept (Major) Major Major; accept (Major) Major]

12. This composer wrote a piece after the death of his son Daniel and a few years later after the death of his daughter Blandine, the first two of his three funeral odes. "The struggle for existence" is the middle section of his *From the Cradle to the Grave*, and he also wrote six Consolations and a set of three Liebestraums (LEE-buh-straums). Many of his pieces have a slow lasso (LAH-shahn) followed by a faster friska, and he also wrote Chasse-Neige (chass-nehj), the twelfth and last of his *Transcendental Études*. Name this nineteenth century composer of *Les préludes* and nineteen Hungarian symphonies.

ANSWER: Franz Liszt

13. This cabinet position is the one that John Crittenden chose when, supposedly, William Henry Harrison offered him his choice of job. Crittenden would serve in this same cabinet position under Millard Fillmore, where he chose not to impede the Compromise of 1850. This position was later held by Mitchell Palmer, who tried to remove anarchists during his namesake raids. During the Clinton Administration the person in this position, who was associated with controversies involving six-year-old Cuban Elián González and the Branch Davidians, was Janet Reno. This position was held by Robert Kennedy when his brother was President. Name this position first held by Edmund Randolph and currently held by Eric Holder, the head of the Department of Justice.

ANSWER: Attorney General

14. This painting was completed soon after the artist saw a work with similar themes which used to be attributed to Giorgione (zhor-zhee-OH-nay), *Pastoral Concert*, and a work including Gustave Courbet (kor-BAY) with the same title was painted by a different artist three years later. The light part of this painting in the upper middle shows a woman in a white chemise (sheh-MEEZ) knee-deep in water, while the lower left corner shows a picnic basket on its side. One man in this picture looks at the viewer, while the other looks and gestures at that man and the woman sitting next to him. Name this work by Édouard Manet (MAA-nay) showing two clothed men sitting with a nude woman.

ANSWER: *The Luncheon on the Grass* [or *Le déjeuner sur l'herbe*; prompt on *Le Bain*; prompt on *The Bath*]

15. One molecule in this class is the oxidation product of the Cannizzaro reaction, and a polymer of this type of molecule is found in disposable diapers because it can adsorb many times its weight in water. The simplest molecule in this class was first extracted from ants, and esters are often made by reacting one of these molecules with an alcohol. An important *tri-* example of one of these acids is found in citrus fruits, while the odor of vinegar is due to the acetic type. Name this class of organic molecules containing a carbonyl (CAHR-buh-nil) bonded to a hydroxyl (hai-DROK-sil) group, often expressed as $R-COOH$.

ANSWER: carboxylic acid [or carboxyl group; prompt on acid]

16. Theocritus wrote a poem about one of these creatures falling in love with Galatea (gaa-luh-TAY-uh), and these are the title creatures in the only satyr (SAA-tir) play to have survived in its entirety from ancient Greece. Three of these creatures named Brontes (BROHN-tees), Steropes (steer-OH-peeze), and Argos (AHR-geez) were locked in Tartarus by their father, Uranus, but later created Hades' Helmet of Darkness, Poseidon's trident, and Zeus' thunderbolts. The most famous of these was tricked into shouting that he was being attacked by Nobody, so his allies did not come to his defense. Identify this race of giants whose most noted member, who was attacked by Odysseus, was the one-eyed Polyphemus.

ANSWER: Cyclopes

17. This character imagines a peacock's tail, eyes opening and closing, and stars being born and quenched while he works on a math problem, though much later he explains a math problem to Sargent while working for Deasy. He is also confused by a question about whether or not he kisses his mother asked by Wells, and much later he is upset that Haines stays at his place with Buck Mulligan. This character identifies with baby tuckoo when his father Simon tells him a story about a moocow, and he attends Clongowes Wood College. On June 16, 1904, this character is offered a place to stay by Leopold Bloom. Name this protagonist in James Joyce's *A Portrait of the Artist as a Young Man* who is also in *Ulysses*.

ANSWER: Stephen Dedalus [accept either or both names]

18. Either the name of this mathematician or Toricelli is used to name a point inside a triangle such that segments from that point to the three vertices form 120-degree angles with each other and the sum of those three segments is minimized. This person's name is used for a group of numbers that are sometimes called primes even though all the examples tested beyond the first five are composite. This mathematician is also the namesake of a theorem that a natural number raised to the p minus one power, minus one, is evenly divisible by p , where p is any prime number; that is his "little theorem". Identify this namesake of the theorem that there are no solutions for an integer n greater than 2 to the equation $x^n + y^n = z^n$, which is his Last Theorem.

ANSWER: Pierre de Fermat (fair-mah)

19. While President of the Board of Trade, this person stipulated that third-class passengers should have seats and be protected from the weather in the Parliamentary Train Act. While Chancellor of the Exchequer, he encouraged the signing of the Cobden-Chevalier Treaty establishing free trade between the United Kingdom and France. After serving for many years under Robert Peel, this man introduced secret balloting in Parliamentary elections and announced that his primary mission was to pacify Ireland when he became Prime Minister. He held that position four times from 1868 to 1894. Name this Liberal who served under Queen Victoria, the rival of the Marquess of Salisbury and Benjamin Disraeli.

ANSWER: William Ewart Gladstone

20. Electronegativity, as measured by both the Luo-Benson and Sanderson methods, depends on the reciprocal of this quantity, and the chemical similarity of zirconium and hafnium is explained by a steady change in this quantity across the lanthanides. The abundance of aluminum in the Earth's crust can be explained by that metal having a slightly larger value for this quantity than silicon, allowing it to easily form crystals with oxygen. Under the Bohr model, this quantity depends on the position of the lowest-energy electron shell and it is usually measured to be less than 3 angstroms. Largest in caesium, name this quantity that decreases from left to right across a period and is commonly defined as half the distance between identical neighboring atoms.

ANSWER: atomic radius [prompt on radius; accept answers logically equivalent to radius of atoms]

TB1. This person claimed that cameras should be seen as evolutionary developments in his article "Image-Freezing Machine". This person wrote the article "Frozen World of the Familiar Stranger" describing people who often see each other but do not interact. This person's thesis compared people in Norway and France, concluding that more conformity was found in Norway. Together with Paul Hollander, this person wrote an article for *The Nation* titled "The Murder They Heard" describing how thirty-eight people ignored an attack on a woman until after she was dead. His most famous experiment was done in response to the Eichmann Nazi Trial. Name this psychologist whose namesake obedience to authority experiment involved the administration of strong electric shocks.

ANSWER: Stanley Milgram

TB2. One novelist from this country wrote a novel about an Argentine named Madariaga titled *The Four Horsemen of the Apocalypse* in addition to the novel *Blood and Sand*. Another author from this country wrote a novel narrated by Angela that is set near a lake that supposedly covers a city. A play from this country describes a woman who decides her five daughters should mourn for eight years. Another work from this country features a man knighted by an innkeeper and a donkey named Dapple that is ridden by Sancho Panza. Name this home country of the writers Vicente Blasco Ibáñez, Miguel de Unamuno, Federico García Lorca, and Miguel de Cervantes.

ANSWER: Kingdom of Spain [or España]

TB3. Which animal...is said to have inspired Robert the Bruce with its perseverance; creates messages like "some pig" in *Charlotte's Web*; and has species like the tarantula and black widow?

ANSWER: spider