# The Mark Discordia Singles Tournament Seeding Round 3 Question Set 3: 60 tossups 

Editing and non-science questions by Matt Weiner<br>Science by Anthony de Jesus, the Washington University Academic Team, and Matt Weiner

1. This procedure does not harm the sample and can be done with a very small sample. Its results are analyzed by examining peaks which correspond to chemical shifts. While some structures can be examined solely with this procedure, it is usually used in conjunction with other forms of spectroscopy. FTP, identify this procedure, the basis for the MRI.
ANSWER: Nuclear Magnetic Resonance
2. It was documented by a Pare Lorentz film and the photographs of Arthur Rothstein. It had its roots in World War I, when prices rose for a certain good; soon, grazelands were converted and motorized disk plows were introduced. However, the relatively deep plowing required for wheat meant that when drought hit, replowing and replanting removed the last of the ground cover. FTP, give the two-word phrase commonly used to denote this agricultural calamity in the Plains states during the 1930s.
ANSWER: the dust bowl [accept equivalents]
3. This molecule can combine with chlorine to form the toxic gas phosgene. It is the most important reducing agent used in the blast furnace reduction of iron oxides. Also used as a fuel, its unshared electron pair on the carbon atom allows it form covalent compounds known as metal carbonyls and it is also a major pollutant. FTP, name this compound which bonds to hemoglobin, poisoning people who run car engines in closed garages.
ANSWER: carbon monoxide [or CO ]
4. Citing Truax v. Raich and Barrows v. Jackson to establish standing for the defendant, the Court noted that effective enforcement of the law in question would violate several Constitutional amendments. Brought by the executive director of Planned Parenthood, this case found that "emanations and penumbras" of the Ninth Amendment invalidated a law against providing information about contraceptives. FTP, name this 1965 Supreme Court ruling which established the "right to privacy."
ANSWER: Griswold v. Connecticut, 381 U.S. 479 [accept Connecticut v. Griswold]
5. A surprise surgical strike by the cavalry under Colonel Diaz, and a stampede initiated by native Zapotec allies, held off three attacks by forces under Conde de Lorencez. Thus, General Ignacio Zaragoza's two thousand men were victorious over the six thousand French. FTP, name this 1862 battle at which Mexico held off occupation for a few more years, now commemorated on Cinco de Mayo.
ANSWER: Battle of Puebla
6. His discrete mass model even applies to vibrating strings which are tight most every night. Proving that every positive integer is the sum of four squares probably got him a lotta nice girls. There's a rumour spreadin' around that his work on the tautochrone led to his discoveries in the calculus of variations. While writing his textbook on analytic functions, which is fine if you got the time, he never worried that he might be mistaken. FTP, give the common name of this Italian-French mathematician and ZZ Top song.
ANSWER: Joseph Louis, Comte de Lagrange [accept Giuseppe Lodovico Lagrangia before the end]
7. Its IUPAC name is 1,1,1-trichloro-2,2-bis (para-chlorophenyl)ethane. Some claim that opposition to its use is based on shaky evidence, blaming its withdrawal for skyrocketing malaria rates in Sri Lanka. It is useful because it is not toxic to mammals below one ounce, but one ounce spread over an acre can defend against insects. FTP, name this pesticide, banned in 1973.
ANSWER: dichlorodiphenylltrichloroethane
8. Cities on this island include Kitakyushu, Kumamoto, and Sasebo, while the largest is Fukuoka. Including the Sendai river and the Aso-San volcano, it sits on the Bungo Strait to the north and the Shimonoseki Strait to the east. FTP, name this island on which Nagasaki is located, the southernmost of the four major Japanese islands.
ANSWER: Kyūshū
9. He first came to prominence in 1948 with the publication of The Road Sign at the End of the Street. He ruminated on vision in The Ruined Map and depicted a voluntarily homeless person in The Box Man. He blended the influence of Kafka with the conventions of the detective story in such works as the short story "The Crime of S. Karuma" and the novel Mikkai. FTP, name this leading proponent of absurdism in Japanese literature, author of The Woman in the Dunes.
ANSWER: Kobo Abe
10. Lytton Strachey called this man's letters "by far the most important single correspondence in the language." His works of artistic criticism include the "Sermon on Painting" and Anecdotes of Painting in England. He printed many of his works on the Officina Arbuteana press at his estate, Strawberry Hill. His account of incest among Adeliza, Edmund, and the Countess of Narbonne is called The Mysterious Mother. FTP, name this author of the landmark gothic novel The Castle of Otranto.
ANSWER: Horace Walpole [prompt on Walpole]
11. Like the other commonly used protocol at its level, it provides error checking and data delivery between processes. Unlike that counterpart, known as UDP, it provides reliable transfer and is connection-oriented: the client and server exchange control packets before beginning actual data transfer. FTP, name this protocol which provides logical communication between processes on a host and often serves as the communication between the IP layer and the application.
ANSWER: transfer control protocol
12. Vinod Velakaturi missed it due to a lack of knowledge about the number of points-after-touchdown scored by Pete Stoyanovich in 1997, while Willy Gibson didn't know what team was the opponent during Eddie George's longest collegiate run. Charlie Avallone got two of them right
regarding Jimmy Connors. FTP, give the name for this minutely detailed but very valuable final set of trivia on ESPN's Two-Minute Drill. ANSWER: Question of Great Significance [prompt on Two-Minute Drill before the first "it"]
13. The standard definition of this material's structure was given in the 1930's by William Zacharisen, who gave a visual definition of the random network theory, stating that short-range order is retained, but long range order is lost. Thus, it has crystal building blocks, but not crystallinity. FTP, give the term for a non-crystalline solid with a chemical composition comparable to a crystalline ceramic, an amorphous, vitreous material, natural examples of which include tektites and obsidian.

## ANSWER: glass

14. This play is the source of quotes about methods of acquiring greatness and a lack of cakes and ale. The maid Maria dislikes the "caterwauling" of the clown Feste, who later goes undercover as Sir Topas. Sir Andrew Aguecheeck is Toby Belch's preferred suitor for the hand of Olivia, while the "affectioned ass" Malvolio is made the object of a scheme. In the disguise of Cesario, Viola is asked to produce Antonio's money, actually in the hands of Viola's twin brother Sebastian. FTP, name this Shakespearean comedy.
ANSWER: "Twelfth Night, or What You Will"
15. It was formed by a merger of groups led by Shigeru Yoshida and Hatoyama Ichiro, respectively. The Lockheed and Recruit scandals were part of a long line of embarrassments that led to its loss of power to Morihiro Hosokawa's coalition in 1993. It has since rebounded under Junichiro Koizumi. FTP, name this party which, since its formation, has seen only that one interruption in its hold on the prime ministry of Japan. ANSWER: Liberal Democratic Party of Japan [or Jiyuminshuto; or Jiminto; accept Liberal Democrats]
16. Its first step is to call for help. Second, establish unresponsiveness. Third, position the patient in a supine position on a hard, flat surface. Fourth: look, listen and feel to establish breathing. Fifth, give two breaths if needed. Sixth, check the pulse. FTP, name this lifesaving procedure. ANSWER: cardiopulmonary resuscitation
17. A year lapses in the middle of the plot, which begins with an unresisted beheading by the bearer of the Pentangle shield and the horse Gringolet. Bertilak de Hautdesert is revealed as one of the title characters, while the other vows to wear a sash for the rest of his life as a reminder of a near-adultery with Morgan le Fay. FTP, name this anonymous late fourteenth century poem.
ANSWER: "Sir Gawain and the Green Knight"
18. Lesser works include the collection Words for Dr. Y and the play "Mercy Street." Accused of plagiarizing her mother in poems published during her youth in Splinters, she began writing again during an episode of postpartum psychosis, described in the collection To Bedlam and Part Way Back. Later, she wrote All My Pretty Ones, The Death Notebooks, and The Awful Rowing Toward God. FTP, name this American poet, who killed herself with car exhaust seven years after winning a Pulitzer for Live or Die.
ANSWER: Anne Harvey Sexton
19. Igant's joke about a rabbit raping a trapped deer inspires a piece of strategy in this film. After resolution of the rivalry between Vasili and Gavrilo for the hand of Olga, we see that Tverdilo is the only prisoner executed, while Von Balk is held for ransom. In a masterful use of contemporary propoganda, the title character, played by Nikolai Cherkasov, looks directly into the camera while urging resistance to the Germans. FTP, name this 1938 Sergei Eisenstein film chronicling the Battle on the Ice in 1242.
ANSWER: Alexander Nevsky
20. Like quasars, they appear as points and have smooth spectra which are flatter than those of a star. Unlike quasars, they emit polarized visible light and vary in all wavelengths of output. They are angled relative to earth such that they emit jets of gamma rays in the direction of our observation. FTP, name this type of active galaxy, characterized by the rapidity and scale of its output variations.
ANSWER: blazars [or BL Lacertae objects]
21. After bathing in the blood of a dragon, he became invulnerable, except for one spot which was covered by a leaf. He stands in for Gunther by using his cape of invisibility to perform feats of strength for Brunhild, and he gives a treasure of gold to Kreimhild. As a result of the intrigue surrounding the marriages, he is lured into a hunt by Hagen, who kills him and puts the gold out of reach. FTP, name this hero of the Nibelungenlied.
ANSWER: Siegfried [accept Sigurd before "Nibelungenlied"]
22. Klaus Witte led German scientists in creating these with a tabletop laser. They are normally created in laboratories by accelerating electrons and passing them through heavy nuclei, such as lead, then using a magnetic field to separate them from electrons. FTP, name these particles, experimentally observed by Carl Anderson, which produce gamma rays in the process of annihilation with an electron.
ANSWER: positrons
23. He got a job in order to buy "disco skates" but was fired after one day. He went to college midway through the last season of the show, leading to a debate over free speech when a white supremacist group spoke at his school. He got in trouble for using a fake ID when romancing Charlene, played by Janet Jackson. FTP, name this person, played by Todd Bridges on Diffrent Strokes, who was often asked to specify the object of his discourse by his brother Arnold.
ANSWER: Willis Jackson
24. Her Summer on the Lakes was noticed by Horace Greeley, who hired her at the New York Tribune. She was promoted to foreign correspondent, publishing articles on Europe as At Home and Abroad. She tied the American ideal to a hope for gender equality in Women in the Nineteenth Century, an outgrowth of an article called "The Great Lawsuit." FTP, name this transcendentalist who, from 1840 to 1842, edited The Dial.
ANSWER: Sarah Margaret Fuller
25. Al-Harri's maqamat are a medieval Arabic version of this type of story, while later European examples include Paul Scarron's Le Roman Comique. In English, the first was The Unfortunate Traveller by Thomas Nashe, while the German form is exemplified by Hans Grimmelshausen's The Adventurous Simplicissimus. Other common examples are Lazarillo de Tormes, Gil Blas, and Tom Jones. FTP, identify
this type of novel which consists of a series of adventures by a carefree, amoral hero.

## ANSWER: picaresque

2̄. Like almost all of his paintings, the Navicella at Old St. Peter's and his commissions for Robert of Anjou do not survive in their original form. His Madonna Enthroned With Angels and Saints is clearly modeled on a similar work by his teacher but incorporates more realistic emphasis. With near-certainty, he is held to be the painter of the Annunciation and Last Judgement in the Arena Chapel frescoes. FTP, name this student of Cimabue often considered the "father of the Renaissance."
ANSWER: Giotto di Bondone
27. He briefly served as a French galley slave after the capture of St. Andrews Castle. He left the Catholic Church after hearing sermons by George Wishart and wrote a Confession of Faith adopted by his nation's parliament. Not a fan of Mary or Elizabeth, he wrote The First Blast of the Trumpet Against the Monstrous Regiment of Women.
FTP, name this founder of Scottish Presbyterianism.
ANSWER: John Knox
28. A cast of this work was given by the Rough Riders to Theodore Roosevelt at the conclusion of the Spanish-American war. The first bronze ever done by its creator, it was modeled on the sculptor's own sketch. In it, a long neck-chain dangles to the ground as the mustached rider is about to whip the rearing horse. Scultped in 1895, it is now housed in the Carter Museum in Fort Worth. FTP, identify this work of Frederic Remington.
ANSWER: Bronco Buster
29. The first attempt, performed while eating a lunch of bacon on greasy biscuits, is successful. The second time, the protagonist, a red-bearded, tobacco-chewing chechaquo, must dry out after falling into Henderson Creek. At the end, the protagonist, who is quick in "things" but not "significances," agrees with the old man on Sulphur Creek: no man should travel alone in the Klondike. FTP, identify this story in which the titular goal is thwarted by snow falling out of a spruce tree, written by Jack London.
ANSWER: "To Build A Fire"
30. His organ compositions include Voluntary in $G$ and Voluntary on the Old Rooth. A prodigous composer of choral works, his output in that genre includes My Heart is Inditing, Ode for St. Cecilia's Day, and Thy Word is a Lantern. FTP, name this composer of Queen Mary's funeral music and a single opera, Dido and Aeneas.
ANSWER: Henry Purcell
$\overline{3} 1$. Although they are now a part of standard C++, they are more associated with Pascal and Java. Code that might produce these events is often bracketed in a try block, and if they occur they are thrown to a handler in a higher context. FTP, name these run-time errors, which in Java include the types ArrayOutOfBounds, FileNotFound, and the infamous NullPointer.
ANSWER: exceptions
32. Its preface includes a satire attacking the king who commissioned it for underpaying its author. Chapters include "The March into Mazinderan," "The Vengeance of Kai Khosrau, " "Byzun and Manijeh," "The Defeat of Afrasiyab," and "The Shahs of Old," while the most often-retold chapter is "Rustem and Sohrab." FTP, name this poem by Ferdowsi, the epic of Persia. ANSWER: Shah Nameh Ferdowsi [accept alternate pronunciations; accept The Epic of Kings: Hero Tales of Ancient Persia; accept The Book of Kings]
33. His works include Les Mains De Jeanne-Marie, collected long after his death, and Illuminations, published without his consent during his life, which contains the "Sonnet of the Vowels." He burned all but five copies of the only work which he authorized, a translation of his own void of values into a depiction of a heathen waiting to be brought into salvation. FTP, name this symbolist poet of A Season in Hell and The Drunken Boat who, at age seventeen, was shot in the wrist by his beau Paul Verlaine.
ANSWER: Jean Nicholas Arthur Rimbaud
34. Likely born with the given name "Nagiko," the personal name by which this author is usually known is a title meaning "Minor Counselor." The daughter of poet Kiyohara no Motosuke, she invented the zuihitsu form in her only known work, which contains such sections as Elegant Things, Hateful Things, and Annoying Things. FTP, name this Heian period author who wrote of her service to Empress Sadako in Makura no sashi, the "Pillow Book."
ANSWER: Sei Shonagon [accept Sei Nagiko; accept Nagiko before it is mentioned]
35. Used commercially as a raw material in organic reactions, if ingested, it oxidizes into formaldehyde and formic acid. Its most toxic effects are seen in the optic nerve. Although Karl Bosch developed a process for making it from hydrogen and carbon monoxide, it was first produced by the destructive distillation of hardwoods, hence the name wood alcohol. FTP, name this compound with formula CH 3 OH , the simplest of alcohols. ANSWER: methyl alcohol [or methanol; prompt on wood alcohol]
36. In 1982, his son Hilary published a biography of him entitled Last Stands. His own early works included the blank-verse drama "Maximilian," the essay collection The New Star Chamber, and the plays "Althea" and "The Bread of Idleness." His most famous work, originally published anonymously in Reedy's Mirror, contains such sections as "Dippold the Optician," "Indignation Jones," and "Petit, the Poet." FTP, name this author of Spoon River Anthology.
ANSWER: Edgar Lee Masters
37. Written by a committee led by Jean-Jacques-Régis de Cambacérès, the duke of Parma, it divides its subject into three areas: personal status, ownership of property, and acquisition of property. Designed to unify an area still split between Germanic and Roman custom, it forms the basis of the modern law of several European and Latin American countries as well as Quebec and Louisiana. FTP, identify this legal system named for a French conqueror.
ANSWER: Code Napoléon [accept Napoleonic Code; prompt on Code Civil des Français]
38. Peripheral characters include two Boer War veterans and a corrupt ex-policeman. Over the four acts, we find out that the syphilitic philanderer Hickey is a spousal murderer, and that the anarchist mother of Parritt was sold out to the police by Parritt out of hatred; at the urging of Larry Slade, Parritt commits suicide. The theme of "pipe dreams" is reflected in the names of Jimmy Tomorrow and the bar owner, Harry Hope. FTP, name this play by Eugene O'Neill.
ANSWER: "The Iceman Cometh"
39. His first major band contained Julian Priester, Buster Williams, and Eddie Henderson. He put a jazz twist on songs by John Lennon, Kurt Cobain, and others on The New Standard; other albums include Gershwin's World, Future Shock, and Headhunters. He led the recording of the landmark modal jazz album Maiden Voyage, and he later formed V.S.O.P. FTP, identify this fusion keyboard player behind the singles "Watermelon Man," "Nefertiti," and "Rockit."
ANSWER: Herbie Hancock
40. His wrote a fake autobiography of a cat in the style of Goethe, The Life and Opinions of Kate Murr. Characters in his other works include a man with no shadow and a man with no reflection; a man possessed by the devil who enters a singing competition in thirteenth-century Germany; and a renowned goldsmith who murders by night. FTP, name this author of The Devil's Elixir and "The Sandman" who was both the source and the main character for an opera by Jacques Offenbach.
ANSWER: Ernst Theodor Amadeus Hoffmann [or Ernst Theodor Wilhelm Hoffmann]
41. She provided the plot for Ravel's opera The Spellbound Child and had an affair with Gabriele d'Annunzzio. La Naissance du Jour and Sido discussed her childhood, while The Vagabond was about female independence. She worked with her first husband to produce the "Claudine novels" under the pseudonym of Willy and toyed with gender roles in the depiction of an affair, Chéri. FTP, name this author of The Pure and Impure and Gigi.
ANSWER: Sidonie-Gabrielle Colette
42. It was not completed until thirty-one years after an event requiring its use took place. Six Slaves intended for it are now exhibited separately. The intended centerpiece, which ended up being the only part of the work by the original artist, was the 1513 Moses. FTP, name this abandoned mausoleum for a Pope, designed by Michelangelo.
ANSWER: tomb of Julius II [or equivalents]
43. It is visually signified by two contour curves crossing between a nested family of hyperbolas. It is commonly exemplified by any critical point for the function " $f$ of $x, y$ equals $x$ times $y$ ", and the discriminant here is always negative. FTP, give the name for this point where a two-variable function has an output less than, and another output greater than, the function's value at the origin.
ANSWER: saddle point
44. He was taught music by Franz Haydn's brother Michael. His first operas included the unfinished Die Drei Pintos, later completed by Gustav Mahler, and the comic Abu Hassan. His major instrumental works are the Mass in E flat and his Second Symphony in C, The Ruler of the Spirits. FTP, name this composer of the operas Euryanthe, Oberon, and Der Freischütz.
ANSWER: Carl Maria Friedrich Ernest von Weber
45. He wrote over a hundred works in his favorite genre: two-to-three page works of fiction which he termed "palm-of-the-hand stories." Characters in his major works include Shingo, Shimamura, and Komako. In the same year that The Master of Go was published, he killed himself with gas in Zushi. FTP, name this author of The Sound of the Mountains, Thousand Cranes, and Snow Country.
ANSWER: Yasunari Kawabata [prompt on Yasunari; accept Kawabata Yasunari]
46. Arias in this opera include "ll balen;" "Di quella pira!" and "A si ben mio," both sung in Castellor Chapell; the duet "Ai nostri monti," performed inside the Aliaferia dungeon; and "Stride la vampa," sung in a gypsy camp. Singers and addresees include Count di Luna, Azucena, Manrico, and Leonora. FTP, name this opera which also includes the Anvil Chorus, written by Giuseppe Verdi.
ANSWER: II Trovatore [or The Troubadour]
47. Type I contains high amounts of metal; Type II does not. Distinguished by their sine-like light curve, they were first discovered in the Small Magellanic Cloud by Henrietta Leavitt, and they are interesting because of a certain change which occurs over a timespan of one to fifty days. FTP, identify this kind of variable star, used as a distance marker due to the relationship between its period and luminosity.
ANSWER: Cepheid variable stars
48. Fetiukov is "the sort of man who would steal potatoes out of another man's soup." Kolya is a former university student who works at the dispensary. Tiurin, Buinovsky, and Senka were formerly in the military. Tsezar Markovich supplies cigarettes and extra food, while the title character, usually denoted by the name Shukhov, is in the ninth year of a ten-year spying sentence. FTP, identify this novel by Alexander
Solzhenitsyn.
ANSWER: One Dav in the Life of Ivan Denisovich [accept equivalent translations; or Odin den Ivana Denisovicha]
49. Justice Stewart was the only dissenting vote, while Justices Frankfurter and White abstained, leaving Justice Black to write a majority opinion for the Court. The attorneys general of twenty-two states filed an amicus curiae brief for the respondent, the chair of the Hyde Park, New York, school board, which had distributed the state's "Statement on Moral and Spiritual Training in the Schools" to teachers. FTP, identify this 1962 case in which public school-mandated prayer was ruled unconsitutional.
ANSWER: Engel et al. v. Vitale et al., 370 U.S. 421 [accept Vitale v. Engel]
50. It predicts the departure from the one-over-r-squared Newtonian falloff at millimeter distances for gravity. Described by Columbia physicist Brian Greene in the book The Elegant Universe, it gives the Planck length as the approximate size of tiny loops that energy that vibrate.
ANSWER: superstrings theory FTP, identify this attempt to merge relativity with quantum mechanics in a potential theory of everything.
51. It is mined in Siberia, Madagascar, and Sri Lanka among other places. Its boring statistics include a metallic luster and a specific gravity of 2.09 to 2.2. Crystallizing hexagonally, sometimes as scales, it is used in used in high-temperature crucibles and atomic reactors, including

Fermi's original nuclear pile, but its most common uses are for lubrication and communication. FTP, identify this allotrope of carbon, which might be found in pencils.
ANSWER: graphite
52. Ratified in the U.S. Senate with only one dissenting vote, its only successful invocation came in 1929 during a Chinese-Soviet dispute over Manchurian railroads. In an unintended consequence of it, several military actions in the 1930s occurred without declarations of war. FTP, identify this 1928 agreement produced by the foreign minister of France and the U.S. Secretary of State, which attempted to end "recourse to war for the solution of international controversies."
ANSWER: Kellogg-Briand Pact [or Pact of Paris; or any equivalent which mentions Kellogg and Briand]
53. Evidence for its existence includes the facts that spiral galaxies have flat rotation curves past the visible stars and that galactic clusters should not have enough gravity to stay together based on observable mass. While neutrinos may be the "hot" kind, the "cold" kind is limited to hypothetical particles such as the photino, axion, and squark. FTP, name this kind of matter said to compose ninety percent of the universe's mass, named for its failure to emit electromagnetic radiation.

## ANSWER: dark matter

54. In the third verse, the singer laments the purchase of fine kerchers and notes that keeping the addressee "both at board and bed" "cost my purse well favoredly." Sometimes attributed to Henry VIII, the melody has lent itself to everything from William Chatterton Dix's Christmas carol "What Child is This?" to the theme from the original Lassie. FTP, identify this traditional song in which the title articles of clothing are "all my joy, "my delight," and "my heart of gold."
ANSWER: Greensleeves
55. It is characterized by the pattern tone-semitone-tone-tone-tone-semitone-tone. It usually starts on D on the piano, but because it is defined by intervals rather than absolute notes, it can be played beginning on any note. It differs from the major scale in that the third and seventh notes are flattened. FTP, name this classical mode of music, named for an invading people of Greece.
ANSWER: Dorian mode
56. Their boundaries with land are called grounding lines, while the opposite sides face the sea and are called calving fronts. Large ones maintain volume by receiving flow from the interior land, while smaller ones collect snow. FTP, give the name for these immense floating platforms of the namesake material, commonly found on the shores of Antarctica and including the Wordie, Miller, Larsen, Ronne-Filchner, and Ross.
ANSWER: ice shelves [or ice shelf]
57. They were mostly businessmen who were concerned with the morality of politicians. Led by Carl Schurz, they took their name from an Algonquin word for "chief." FTP, name this faction which voted for Democrat Grover Cleveland in 1884 after their Republican Party nominated Half-Breed James G. Blaine.

## ANSWER: Mugwumps

58. He thought that the lame Peter Doyle was coming to be cured by his newfound Christian faith, but instead Doyle shoots him, as vengeance for his affair with Doyle's wife Fay. The day before, he had convinced his pregnant girlfriend Betty to marry him and promised to seek employment with Bill Wheelright, having quit his job writing an advice column. FTP, name this title character of a novella by Nathanael West. ANSWER: Miss Lonelyhearts
59. During public processions, he stood next to a statue of his boyhood friend Britannicus. A triumphal arch was built in the eastern end of the Forum in honor of the Fifteenth Legion of Apollo, which, under his command, sacked Jerusalem and destroyed the Second Temple in 70 CE. The eldest son of Vespasian, he was succeeded by his brother Domitian. FTP, name this Emperor who, in 80 CE, dedicated both his namesake baths and the Colosseum.
ANSWER: Titus Flavius Vespasianus
60. In 1913, Niels Bohr hypothesized that it is quantized, and it turns out to be quantized into integral units of Planck's constant divided by two-pi. It is inversely proportional to the speed of precession., and must remain the same for a star as it collapses into a neutron star. FTP, name this vector quantity whose change with respect to time is equal to the torque acting on a system, and whose conservation is often demonstrated in classrooms with a bicycle wheel and a freely rotating stool.
ANSWER: angular momentum
