



The Illinois Mathematics and Science Academy of Aurora, IL,



in partnership with Loyola Academy of Wilmette, IL, present

IMSANITY 3

-ROUND 14-

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Tossups

- (1) This nation's first government was known as the Consultation. This nation won the Council House Fight and the Battle of Plum Creek under its leader Mirabeau Lamar. The Regulator-Moderator War occurred in this nation, whose independence movement began with the abolition of the Constitution of 1824. This nation suffered the Goliad Massacre, which was committed by an enemy general who was later captured by this nation at the Battle of (*) San Jacinto; that enemy general was Santa Anna. Annexed by James Polk, for ten points, name this nation led by Samuel Houston whose rallying cry for independence was "Remember the Alamo."

ANSWER: Republic of Texas (prompt on "Lone Star Republic")

- (2) The Introduction to this work claims that China and India lack the method of Thucydides and the system of Aristotle. This work notes that the concept of a citizen was unknown outside of the West. In this work, the author notes the similarity between the words "calling" and "career", such as in the German "Beruf", present in translations of the Bible. This work states that higher education in technology is attained by relatively few (*) Catholics and that many great entrepreneurs came from families of clergy. For ten points, name this economic tract considering Calvinism written by Max Weber.

ANSWER: The Protestant Ethic and the Spirit of Capitalism

- (3) This man's early work included a monograph on Cirripedia. This man's advisor, a geologist who rose to prominence after his work on uniformitarianism, was Charles Lyell. This man was urged by Lyell to publish his work when Alfred Russel Wallace developed an identical theory while working in Sarawak. This man coined the term (*) "descent with modification". For ten points, name this naturalist whose travels on the H.M.S. Beagle led to his theory of natural selection, espoused in his *On the Origin of Species*.

ANSWER: Charles Darwin

- (4) The protagonist of this novel steals her first husband from Honey and names their first son for his colonel, Wade Hampton. When that husband dies, the protagonist of this novel marries the fiance of her sister in order to get 300 dollars to pay her taxes. That second husband, Frank Kennedy, dies in a Klan raid, prompting the protagonist to marry a man who had been expelled from West Point and was described as a (*) Scallawag. The protagonist is told "My dear, I don't give a damn" as that third husband, Rhett Butler, leaves her. For ten points, name this novel by Margaret Mitchell about Scarlett O'Hara.

ANSWER: Gone With The Wind

- (5) With Chione, this figure fathered Autolycus, and another of this god's sons was killed after removing a pin from a chariot. According to Aesop, one version of this god tested Tiresias by taking his cattle. This god hid from Typhon in the form of an Ibis, and later, with the nymph Dryope, fathered Pan. This god stole a herd of cattle by leading them out of a pasture backwards shortly after his birth on Mount Kyllene, and he combined entrails from one cow and a (*) turtle shell to construct the first lyre. The son of Zeus and Maia, for ten points, name this Greek messenger god.

ANSWER: Hermes (accept Mercury)

- (6) This President signed the Scott Act into law. During his campaign, Samuel Burchard labeled his party "Rum, Romanism, and Rebellion," and after allegations of an illegitimate child with Maria Haplin were released, opponents chanted "Ma, ma, where's my Pa." This President also vetoed the silverite Richard Bland's bill. After the threat of Coxey's army, this President sent troops to quell the (*) Pullman Strike. The support of Mugwumps helped him defeat James Blaine to win the presidency. For ten points, name this Democrat whose two terms were notably not consecutive.

ANSWER: Grover Cleveland

- (7) This poet describes "A Monday morning right early in the year," when "The young Chevalier" came to town. This author of *Charlie, He's My Darling*, concluded one poem by cautioning the reader to think of the main character's horse, and another poem is about two shepherds debating who had won the eponymous *Battle of Sherramuir*. After getting drunk one night, the main character of one of this man's poems sees three witches, one of whom he names "Cutty-Sark." This author of (*) *Tam o' Shanter*, compared his love to a "red, red, rose" in one poem, and said "the best-laid schemes o' mice and men gang aft agley" in another. For ten points, identify this author of *Auld Lang Syne* and *To a Mouse*.

ANSWER: Robert Burns

- (8) Television tuners often contain examples of these devices with variable capacitance. An early type of these devices used thermionic emission and were packaged in vacuum tubes. The Schottky variety of these devices has much faster switching time than the common p-n junction variety. Types of these devices designed to operate below their breakdown voltage include avalanche and Zener. A rudimentary example of these devices is used in cat's whisker radios, and four of these devices are now used in a full-wave rectifier. Superior alternatives to incandescent bulbs include their (*) light-emitting variety. For ten points, name these types of electronic devices which pass current in one direction.

ANSWER: diodes

- (9) One work by this composer is characterized by rapid chromatic scales played by the third, fourth, and fifth fingers of the right hand. A collection of works by this composer was arranged by Leopold Godowsky. One work beginning with rapid descending runs in the left hand was inspired by the bombardment of this composer's hometown, and Schumann dubbed another "Aeolian Harp." This composer wrote a piece in which the right hand only plays black keys. Works like "Winter Wind" and (*) "Revolutionary" are examples of his etudes, and he is also known for his nocturnes and polonaises. For ten points, name this Polish composer of the *Minute Waltz*.

ANSWER: Frédéric Chopin

- (10) The Erdős-Graham Conjecture concerns when 1 is expressible as a sum of these entities. A commutative ring in which all nonzero elements have one of these is called a field. All positive rational numbers can be expressed as a sum of these entities corresponding to positive integers. The harmonic series is the (*) sum of these entities over the positive integers. Division by a number x can be achieved by multiplying by this function of x . Also called a multiplicative inverse, for ten points, identify this term for 1 divided by a given number.

ANSWER: reciprocals of integers (accept multiplicative inverses before mention, accept Egyptian fractions or unit fractions and prompt on "fractions" before "field", prompt on "1 over x " or "1 divided by x ")

- (11) Neodymium magnets are alloys of neodymium, iron, and this element, acids of which are used in the Suzuki reaction. Herbert Brown won the Nobel Prize in chemistry for devising an organic reaction that uses a compound of this element to produce alcohols in an anti-Markovnikov fashion, and chemical electroplating of nickel commonly uses this element's sodium hydride as a reducing agent. Discovered by Sir Humphry Davy, its bonding can be determined by (*) Wade's rules, and it notably violates the octet rule. For ten points, name this element found in Pyrex glassware with atomic number 5 and elemental symbol B.

ANSWER: Boron (prompt on "B")

- (12) In one work by this author, Teddy Bumpos suggests publishing poems Henry Apjohn wrote about Teddy's wife, Aurora. In addition to *How He Lied to Her Husband*, this author wrote a play in which Violet disappoints her brother's friend by not being a single mother, and, in an attempt to run from Ann Whitfield, Jack Tanner meets Don Juan in hell. In another play by this author, the title character's fiance Adolphous Cusins inherits the (*) arms factory from her father, Andrew Undershaft. The author of *Major Barbara* and *Man and Superman*, for ten points, identify this author of a play about Henry Higgins and Eliza Doolittle, *Pygmalion*.

ANSWER: George Bernard Shaw

- (13) Carl Jung gave a seminar examining the influence upon this work of its author's subconscious. Early sections of this work reject metaphysics and a mind-body dualism, and the speaker claims that internal chaos is necessary to produce a "dancing star". The underlying principle of this book is the question of whether or not the universe repeats itself infinitely, or the doctrine of eternal recurrence. This work asserts that humanity's current state is a transition state on the way to the ideal (*) Übermensch. Subtitled "A Book for All and None", for ten points, name this work by Friedrich Nietzsche in which the titular Persian mystic claims that "God is dead".

ANSWER: Also Sprach Zarathustra (or Thus Spoke Zarathustra)

- (14) This man tied torches to the tails of three hundred foxes in order to burn down a field. This man asked God to open up a spring at Lehi to quench his thirst after he killed a thousand men with the jawbone of a donkey. During a sacrifice to Dagon, this man knocked down the temple and killed everyone inside. Earlier, this man had lied to his wife about (*) tying him up with newly used ropes and the hair on his own head before telling her the real secret of his power. For ten points, name this Hebrew Judge who lost his superhuman strength after having his hair shorn by Delilah.

ANSWER: Samson

- (15) He became leader after winning a contest with six other nobles in which his horse was the first to neigh after sunrise. After a mule owned by Zopyrus gave birth, this leader mutilated his face and used him as a fake deserter to conquer Babylon under Nebuchadnezzar III. He had a servant remind him every day "Master, remember the Athenians" after suppressing the Ionian revolt they had supported, but his army was defeated by Miltiades at (*) Marathon. He rebuilt the royal road and divided his empire into twenty satrapies. For ten points, what Persian king was succeeded by Xerxes I?

ANSWER: Darius I or Darius the Great

- (16) In this novel, one character's exile is cut short when his half-brother has eye problems and dreams of their father. One character in this novel refuses to reveal to the protagonist her real name, and it is not until after her death that her servant, Ukon, tells him. The title character is presumed to have died in the blank forty-second chapter, "Vanishing into the Clouds". One character is predicted to have three children— an empress, an emperor, and a chancellor – and does, with (*) Akahashi's daughter, Fujitsubo, and Aoi, respectively. For ten points, identify this 11th century Japanese novel about the title character's love affairs written by Murasaki Shikibu.

ANSWER: The Tale of the Genji (or Genji Monogatari)

- (17) The leftmost figure in this painting has a red cross embroidered on his chest, which was turned to the left in Picasso's first recreation of this painting. A window on the right illuminates two large pictures hanging on the back wall just above a mirror and an open door leading to some stairs on which a cloaked man stands. On the right, a child rests a (*) foot on a dog, and a tray with a red cup is held up to the central figure, who is wearing a white dress. For ten points, name this painting of a group of people surrounding the Infanta Margarita by Diego Velazquez.

ANSWER: Las Meninas (or The Maids of Honor)

- (18) The Dvorak method is used to gauge the intensity of these objects, and the "stadium effect" occurs in their center. The Fujiwhara effect originates when two of these objects rotate around each other. Weak examples have a Central Dense Overcast, and they commonly originate from easterly waves in the ITCZ. Good upper-level outflow aids the intensification of these objects, and (*) eyewall replacement cycles occur in strong ones. The strongest of these objects may develop pinhole eyes, and their detrimental effects include tornadoes, torrential rain, and storm surge. For ten points, name these strong rotating storms with high winds that have names such as Lionrock and Katrina.

ANSWER: hurricanes or tropical storms or tropical cyclones or typhoons (prompt on "cyclone")

- (19) This leader denied prior knowledge of the April 9 tragedy, and the June Fourth massacre occurred shortly after a visit by this leader. Eduard Shevardnadze explained this man's foreign policy using Frank Sinatra's song "My Way", and this leader spent three days "resting" under house arrest in Foros during the August Coup. This leader created the Law on Cooperatives to allow private ownership of businesses in his policy of (*) perestroika. Asked by Ronald Reagan to tear down the Berlin Wall, for ten points, identify this last leader of the U.S.S.R.

ANSWER: Mikhail Sergeyevich Gorbachev

- (20) One group to parody this song was fired by the El Monte aquatic center, and another parody of this song features a figure in superman underwear later stand in front of a white and red Ferris wheel. A scene in this song's original music video features the main vocalist rapping in a subway and on a toilet seat. That video opens the singer's (*) sunglasses reflecting a woman fanning him, and that man also screams at a woman's posterior in a yoga park and hops while swinging an imaginary lasso. Titled after a wealthy district in Seoul, for ten points, name this viral music video in which Korean rapper PSY performs the Horse Dance.

ANSWER: Gangnam Style

- (21) One person from this country piloted the ship *Astrolabe* to discover Graham Land, and a person with a ship of the same name first visited the island of Maui before disappearing in the Pacific. This country's colony of Fort Caroline in Florida was destroyed by the Spanish. New York Harbor was discovered by an explorer working for this country, Giovanni da Verrazzano. One explorer from this country discovered the Chicago Portage and trekked down the Mississippi. A person from this country quickly routed the Iroquois with a musket after founding (*) Quebec City. The nationality of Dumont D'Urville and La Perouse, for ten points, name this country that sent out explorers such as Louis Joliet and Samuel de Champlain.

ANSWER: France

Bonuses

- (1) This property is used in showing modern 3D movies as an alternative to red and blue filters. For ten points each:
- [10] Identify this property of light or other transverse waves which describes the orientation of the wave. It can occur in circular or linear types.
ANSWER: polarization
- [10] This effect causes the plane of polarization of light to slowly rotate. It depends on the Verdet constant.
ANSWER: Faraday effect
- [10] The Faraday effect provided evidence that these entities affect electric phenomena. Lines of these entities emanating from poles can be traced out by iron filings, and compasses align along them.
ANSWER: magnetic field (prompt on partial answer)
- (2) This show sees Mozzie steal from a Nazi ship, complicating the main character's relationship with Sara Ellis. For ten points each:
- [10] Identify this TV show, created by Jeff Eastin, about art thief Neal Caffrey and his FBI handler Peter Burke.
ANSWER: White Collar
- [10] Eastin criticized the voice-overs and appearance of Madeleine in this show created by Matt Nix. It follows Michael Westen who works as a private investigator with Sam Axe and Fiona Glenanne.
ANSWER: Burn Notice
- [10] *Burn Notice* and *White Collar* were both broadcast on this network. Its slogan is "characters welcome" and it also broadcast a show about a neurotic private detective, *Monk*.
ANSWER: USA Network
- (3) The theme of this piece begins with the flute and moves on to each instrument as it is repeated eighteen times. For ten points each:
- [10] Name this repetitive piece built around an ostinato in the snare drums.
ANSWER: Bolero
- [10] This French composer of *Bolero* also composed the ballet *Daphnis et Chloe* and a five movement suite for solo piano, *Miroirs*.
ANSWER: Maurice Ravel
- [10] Ravel wrote a World War I memorial piece titled after the "Tomb" of this French Baroque composer, who primarily wrote keyboard works like *The Art of Playing the Harpsichord*.
ANSWER: Francois Couperin le Grand

- (4) Some speculate that the eruption of the Thera supervolcano destroyed this culture. For ten points each:

[10] Name this culture which used the Linear A script and spread the use of bronze around the Mediterranean. Their society may have been matriarchal.

ANSWER: Minoans

[10] The three main periods of Minoan civilization – “Old”, “New”, and “Final” – are named for these structures. A very large Minoan example of these structures is located at Knossos and has frescoes of bull-leaping.

ANSWER: palace

[10] The Minoan civilization was located on this Mediterranean island. During World War II, Germany landed paratroopers on this island during Operation Mercury.

ANSWER: Crete

- (5) Answer the following about works of French symbolists for ten points each.

[10] Stéphane Mallarmé translated this poem into French. It was originally written by Edgar Allen Poe, references the lost Lenore, and quotes the title bird saying “Nevermore”.

ANSWER: The Raven (or Le Corbeau)

[10] This collection of poetry contains sections “The Sick Muse”, “The Albatross”, and “Spleen and Ideal”, and the preface ends by calling the “hypocrite reader” “my likeness, my brother”. It was written by Charles Baudelaire.

ANSWER: Les Fleurs du mal or The Flowers of Evil

[10] This work claims “I invented the color of the vowels” in “Alchemy of the Word” and was written by Stephen Arthur Rimbaud.

ANSWER: A Season in Hell (or Une Saison en Enfer)

- (6) Answer the following about north African rivers for ten points each.

[10] This African river joins the Niger river as its most important tributary. It rises in the Adamawa mountains of Cameroon and proceeds westward.

ANSWER: Benue River

[10] The Gongola River joins the Benue to the Logone River, which ultimately empties into this large lake. The Logone and Chari Rivers meet at N’Djamena, the capital of the country sharing its name with this lake.

ANSWER: Lake Chad

[10] The Akosombo dam on this river forms its namesake lake in Ghana, which is the largest water reservoir in the world by surface area. Its tributaries include the “Red”, “Black”, and “White” versions.

ANSWER: Volta River

- (7) According to the first Europeans to describe it, Joao de Barros and Carl Mauch, this site was obviously too complicated to be built by black natives. For ten points each:
- [10] Name this ancient city in Southern Africa, containing the Great Enclosure and a Conical Tower, which was the center of an empire that existed between 1200 and 1500 and lends its name to a modern-day country.
- ANSWER:** Great Zimbabwe (prompt on “Zimbabwe”)
- [10] The British South Africa Company established this country over the area occupied by the site. This country was named after its rich leader who wanted to mine gold and build a Cape-Cairo telegraph line.
- ANSWER:** Rhodesia
- [10] Great Zimbabwe erected many statues of these figures made out of soapstone, which served as their symbols and are now featured on Zimbabwe’s flag. Rhodes took these statues to South Africa, but most were given back to the modern Zimbabwean government.
- ANSWER:** Zimbabwe Birds
- (8) Confusion arose because this man vaguely defined a line as “breadthless length”. For ten points each:
- [10] This Greek mathematician introduced the definitions and axioms for his namesake geometry in his thirteen-volume textbook *The Elements*.
- ANSWER:** Euclid of Alexandria
- [10] Euclid’s fifth and most controversial axiom is this one which states that, for every line L and any point P not on L , there is exactly one line through P having the namesake relationship to L .
- ANSWER:** parallel postulate or parallel axiom
- [10] This Russian mathematician developed non-Euclidean geometry by replacing the parallel postulate with the axiom that infinitely many lines parallel to L could be drawn through P .
- ANSWER:** Nikolai Ivanovich Lobachevsky
- (9) Answer the following about Jewish New Years for ten points each.
- [10] This “head of the year” is the most famous Jewish New Year. It is celebrated ten days before Yom Kippur by eating apples and honey and emptying pockets into the water during Tashlich.
- ANSWER:** Rosh Hashanah
- [10] This new year for the trees involves eating fruits with hard inner cores and outer shells, as well as drinking four cups of wine that get progressively more red.
- ANSWER:** Tu B’Shevat (or Fifteenth of Shevat)
- [10] In addition to being the new year for festivals and the place where months of the calendar starts, the first of Nissan marks the first day of one of these periods.
- ANSWER:** reign of a king

- (10) It was the first book to suggest machines could gain consciousness. For ten points each:
- [10] Name this Samuel Butler novel in which Higgs explores the title country. He falls in love with Arowhena, studies with her at the University of Unreason, and they flies away with her.
ANSWER: Erewhon or, Over the Range
- [10] *Erewhon* was at least partially modeled after this book. Written by Thomas More, it described a continent with no private ownership and households of 10 to 16 people, plus two slaves. The described country was supposed to be perfect.
ANSWER: Utopia
- [10] Rather than just write about utopian communities, this poet tried to establish one with Robert Southey. Although the plans for Pantisocracy fell apart, he did write several poems titled after it.
ANSWER: Samuel Taylor Coleridge
- (11) Identify the following about ancient Greek sculpture for ten points each.
- [10] This sculpture, attributed to Praxiteles, depicts a nude god resting his left arm on a tree trunk covered with a sheet. In that left arm he holds a young god, and his right arm is missing.
ANSWER: Hermes and the Infant Dionysus (or Hermes with the Infant Dionysus, prompt on “Hermes of Praxiteles” or “Hermes of Olympia”)
- [10] This artist’s *Athena Parthenos* is housed at the Parthenon. He also sculpted the twelve-meter-tall *Statue of Zeus at Olympia*.
ANSWER: Phidias
- [10] All three aforementioned works were sculpted from blocks of this material. Sculpted slabs of this material were taken from the Parthenon to England by the Earl of Elgin.
ANSWER: marble
- (12) One character had a courter who would give her a watermelon every week carved with the initials E.A.T., and she described him to her grandchildren June Star and John Wesley. For ten points each:
- [10] Identify this story in which Bailey gets into a car accident and the only “help” to come for the family is the Misfit, who kills the Grandmother last.
ANSWER: A Good Man is Hard to Find
- [10] *A Good Man is Hard to Find* is a short story by this Southern Gothic writer who about Hazel Mote in the novel *Wise Blood* in addition to writing *The Violent Bear it Away*.
ANSWER: Mary Flannery O’Connor
- [10] This O’Connor short story follows Tom Shiftlet as he fixes an old car, marries Lucynell Crater, abandons her at a restaurant, and drives away.
ANSWER: The Life You Save May Be Your Own

- (13) Although not specifically acids and bases, strong varieties of these dissociate completely whereas weak ones only do so partially. For ten points each:

[10] Name these compounds which dissociate into ions when placed in polar solvents. They carry charge when electric current is run through a solution.

ANSWER: electrolytes

[10] Calculation of colligative properties must take this factor into account when dealing with electrolyte solutions. In ideal solutions with no ion-pairing, this factor is two for sodium iodide and three for calcium chloride.

ANSWER: van't Hoff factor

[10] The extent of ion pairing in solution is related to this property of the solvent, a measure of how well it stores electrical energy relative to a vacuum. It may also be known as the relative permittivity of the solvent.

ANSWER: static dielectric constant

- (14) Answer the following about American political families for ten points each:

[10] Identify this family, one of whose members died while playing football on skis and two of whom were assassinated by Sirhan Sirhan and Lee Harvey Oswald.

ANSWER: Kennedy

[10] Moderate Republicans were once nicknamed after this vice-president to Gerald Ford who refused to negotiate during the Attica Prison riot. His grandfather founded Standard Oil.

ANSWER: Nelson Aldrich Rockefeller (prompt on "Rockefeller")

[10] Members of this family include a New Deal opponent who co-sponsored a Labor Act with Hartley, a recent Governor of Ohio, and a President who sponsored the Payne-Aldrich tariff.

ANSWER: Taft

- (15) A key step in finding these is often to compute critical points. For ten points each:

[10] Identify this type of point on the graph of a function which has the smallest y -value. The absolute value function has one at the origin, and the sine function has one when x equals 3π [pronounced "pie"] over 2.

ANSWER: minimum point (prompt on "extreme point" or "extremum")

[10] Minimum points occur where a graph has a horizontal tangent line and this function is positive. This function measures the concavity of the graph.

ANSWER: second derivative (accept " f double prime")

[10] In multi-variable calculus, this type of point occurs when the tangent plane is horizontal but the point is not a maximum or a minimum. These points are a maximum in one direction but a minimum in another direction.

ANSWER: saddle point

- (16) This party's principles were codified in the Tamworth Manifesto by Robert Peel. For ten points each:

[10] Name this British political party which included Prime Ministers Benjamin Disraeli and Margaret Thatcher. This party's David Cameron is currently in power.

ANSWER: Conservative and Unionist Party (accept Tory or Tories)

[10] This Conservative Prime Minister wrote an eponymous declaration that expressed his government's support for a Jewish homeland.

ANSWER: Arthur James Balfour (or Earl of Balfour)

[10] This uncle of Balfour was also Prime Minister on three occasions. He enacted laws that improved workers' dwellings, coordinated Britain's "Splendid Isolation", and served during the Second Boer War and the Fashoda crisis.

ANSWER: Robert Arthur Talbot Gascoyne-Cecil, Marquess of Salisbury (accept either underlined portion)

- (17) An increase in the number of these molecules is frequently associated with an increased risk of atherosclerosis. For ten points each:

[10] Name this molecule which plays an integral role in maintaining cell membrane fluidity. It can travel through the bloodstream, but only while surrounded by a group of lipoproteins.

ANSWER: cholesterol

[10] Cholesterol is a fatty version of this kind of organic compound, which consists of four fused carbon rings. Their anabolic variety can be used as a drug.

ANSWER: steroids

[10] Steroids such as testosterone belong to this class of chemicals which function in long-distance communication through the bloodstream.

ANSWER: hormones

- (18) Identify these early jazz pianists for ten points each.

[10] This pianist and bandleader, who was backed by his Red Hot Peppers, composed *Wolverine Blues* and *Black Bottom Stomp*. He often claimed to have invented jazz music while in New Orleans.

ANSWER: Jelly Roll Morton (or Ferdinand Joseph LaMothe)

[10] Jelly Roll Morton recorded two versions of this man's hit *Maple Leaf Rag*, including one in "St. Louis Style". This American composer also penned the ragtime hit *The Entertainer*.

ANSWER: Scott Joplin

[10] This composer of *East St. Louis Toodle Oo* is best remembered for his tracks *Mood Indigo* and *It Don't Mean a Thing (If It Ain't Got That Swing)*.

ANSWER: Edward Kennedy "Duke" Ellington

- (19) He had a never-barren fruit tree, a never-empty cauldron, and a self-playing harp. For ten points each:

[10] Identify this Irish all-father, who caused the sun to stop for nine months so that his son was born the same day he was conceived. He was later tricked out of his home by the same son.

ANSWER: Dagda

[10] Dagda was a king of this race of god, which also includes Nuada, Morrigan, and Lugh. They defeated the Fir Bolg for control of Ireland.

ANSWER: Tuatha De Danann

[10] Lugh was the father of this mortal, who defeated Queen Maeve at the Cattle-Raid of Cooley and took the name of a dog after killing it.

ANSWER: Cu Chulainn (or Setanta)

- (20) The main character reads “The League of the Divine Wind”. For ten points each:

[10] Identify this novel in which Judge Honda believes Isao Iinuma is the reincarnation of Kiyoaki Matsugae.

ANSWER: Runaway Horses (or Honba)

[10] The author of *Runaway Horses* also wrote this novel in which Mizoguchi befriends the club-footed Kashigawa and burns down the title structure.

ANSWER: The Temple of the Golden Pavilion (or Kinkaku-Ji)

[10] *The Temple of the Golden Pavilion* was written by this author, who included *Runaway Horses* in his *Sea of Fertility* tetralogy.

ANSWER: Yukio Mishima (accept in either order)

- (21) Answer some questions about kinetic energy for ten points each.

[10] This physicist rewrote Newtonian mechanics to simplify coordinate transformations. He also names a quantity equal to kinetic energy minus potential energy.

ANSWER: Joseph Louis Lagrange

[10] Kinetic energy remains constant in this type of collision. In the real world, this does not happen, as some kinetic energy is converted into heat.

ANSWER: elastic collision

[10] Particles in an elastic collision can be represented with point masses at these locations upon which objects balance.

ANSWER: center of mass or center of gravity