



The Illinois Mathematics and Science Academy of Aurora, IL presents

IMSANITY 4

-ROUND 15-

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Tossups

- (1) The Borsuk-Ulam Theorem describes continuous functions with one of these shapes as their domain. This shape is the one-point compactification of a plane. The densest possible way to arrange these shapes is the subject of Kepler's Conjecture. These shapes are mapped onto planes by stereographic projections, a technique used in^(*) cartography. The surface area of this shape is four times the area of one of its great circles, and its volume can be computed as four-thirds pi r -cubed. For ten points, name this shape consisting from all points in three-dimensional space whose distance from the center is a fixed radius.

ANSWER: sphere

- (2) In one work by this author, the "Red Fox" Colin Roy dies. This author wrote "Fair the day shine as it shone on my childhood," in a poem that begins "Home, no more home to me, whither must I wander?" and was collected in *Song of Travel and Other Verses*. In a novel by this author, the protagonist stays with Alan Breck after Ebenezer sells Hosean his nephew,^(*) David Balfour. Mr. Utterson finally discovers that the two title characters are the same in one work, and another novel follows Jim Hawkins and Long John Silver. For ten points, identify this author of *Kidnapped*, *Dr. Jekyll and Mr. Hyde*, and *Treasure Island*.

ANSWER: Robert Louis (Balfour) Stevenson

- (3) In one of this composer's collections, the third piece in D flat major is played legato and staccato simultaneously by the left hand. This man dedicated his *Opus 40* to Jules Fontana. This man was the dedicatee of Robert Schumann's *Kreisleriana*, and this composer of the *Grande Valse Nouvelle* used a repeated A flat to evoke the title objects in his *Raindrop Prelude*. He also wrote a solo piano piece that remembers the November Uprising, his^(*) *Revolutionary Étude*. For ten points, name this composer of nocturnes, mazurkas, and polonaises, a Polish-French composer.

ANSWER: Frédéric Francois Chopin (accept Fryderyk Franciszek Chopin)

- (4) **The amount of this element in a substance can be determined by passing heated gases over columns that absorb carbon dioxide and water in a method named for Dumas. Although not oxygen, one compound used to power space satellites in the 1960s contains two atoms of this element. Reacted with calcium carbide in the Frank-Caro process, this element was called(*) “fixed air” by its discoverer, Daniel Rutherford. This pnictogen is synthesized by the fusion of carbon and hydrogen in supernovae and is found in hydrazine and the azide ion. Existing in oxidation states ranging from -3 to +5, for ten points, name this most abundant element in the atmosphere with chemical symbol N.**

ANSWER: Nitrogen (accept N before mention)

- (5) **One political cartoon of this man shows him as a puppet with cymbals reading “prosperity” and “good wages,” and another cartoon of this politician shows him as a snake eating a donkey. This man founded a newspaper called *The Commoner*. This man resigned as Woodrow Wilson’s Secretary of State after the sinking of the *Lusitania*, and he opposed(*) Clarence Darrow in the Scopes Monkey Trial. One speech this politician gave proclaimed that “you shall not crucify mankind upon” the titular object. For ten points, name this orator of the *Cross of Gold* speech, a populist bimetallism proponent who lost the presidential election of 1896.**

ANSWER: William Jennings Bryan

- (6) **This figure employed two-thousand pound ants which only ate Swedish snuff. During one project, this figure worked with seven people all named Elmer. Companions of this figure included the creator of the donut as well as a chef who lost an arm and leg when a barrel blew up, Ole the Blacksmith and Sourdough Sam. He shoveled the center of the Round River in order to create the(*) Round Lake, and it took five storks to deliver this figure as a baby. Minnesota’s lakes were formed by the footprints of this figure and his companion, Babe the Blue Ox. For ten points name this giant lumberjack from American folklore.**

ANSWER: Paul Bunyan

- (7) The participants in this event had to clear a faucet tampered with by “vandals”, and they later voted to watch *Treasure Island* instead of *Kidnapped*. During the second stage of this event, the winning team earned a trophy and a pocket knife. At the end of this event, a five dollar reward was used to buy malts for all participants. This experiment supported realistic conflict theory, divided its participants into groups called(*) “The Rattlers” and “The Eagles”, and demonstrated that teamwork reduces tension. For ten points, name this experiment conducted by Muzafer Sherif at a summer camp near the namesake Oklahoma state park.

ANSWER: Robbers Cave experiment

- (8) Forces under this commander freed the Republic of Uzice, and this man was accused of poisoning the bishop Aloysius Stepinac. Along with Milovan Dilas, this politician sponsored a profit sharing initiative about “self-management”, and his security agency was known as the UDBA. He led his country through the Informbiro period, and this man told Stalin to “stop sending people to kill me”. This European politician was instrumental in creating the(*) Non-Aligned Movement, becoming its first Secretary General. Succeeded by Lazar Kolisevski, for ten points, name this longtime Communist leader of Yugoslavia.

ANSWER: Josip Broz Tito

- (9) The Cauchy-Riemann equations are necessary for a complex function to have this property. One hypothesis of the Mean Value Theorem is that the function have this property on the interior of its domain. The Weierstrass [READ: “VY-ur-shtrass”] Function does not have this property but is continuous. Candidates for extrema include endpoints, stationary points, and points where the function(*) lacks this property. The composition of functions with this property also have it according to the Chain Rule. The absolute value function has this property everywhere except when x is zero. For ten points, name this property in which a function has a well-defined slope.

ANSWER: differentiability (accept word forms like differentiable, prompt on answers containing the word “derivative”)

- (10) **One villanelle in this work is built around the lines “Are you not weary of ardent ways? / Tell no more of enchanted days.” One character in this novel thinks of the hands of a girl to understand the meaning of “Tower of Ivory.” The protagonist speaks to a rector about his glasses being broken, which had brought unjust treatment from(*) Father Dolan. Charles Parnell’s death leads to a vicious argument between Mr. Casey and Dante Riordan, and Father Arnall gives a vividly descriptive sermon on the horrors of hell. Stephen Dedalus is the protagonist of, for ten points, what James Joyce novel?**

ANSWER: A Portrait of the Artist as a Young Man

- (11) **This man’s first recorded solo was on Dizzie Gillespie’s *We Love to Boogie*. This man’s first quartet included Elvin Jones and Jimmy Garrison. A set of alternate jazz chord progressions are this man’s namesake changes. An album that this man recorded with Paul Chambers contained the tracks *Countdown* and its title song *Giant Steps*. This musician, whose improvisation was dubbed(*) “sheets of sound”, divided his most famous album into the sections *Acknowledgment*, *Resolution*, *Pursuance*, and *Psalm*. For ten points, identify this jazz saxophonist who recorded the song *My Favorite Things* and the album *A Love Supreme*.**

ANSWER: John (William) Coltrane

- (12) **Darier’s disease and squamous cell carcinoma affect one structure of this name. Trichomes can be found on a structure with this name, which also refers to a layer that consists of stratum granulosum and spinosum. The cork cambium produces material that replaces this structure, which borders palisade and spongy cells and is the location of(*) guard cells that flank stomata. Desmosomes cross-link keratinocytes in this structure, which in other organisms is located above the mesophyll and covered by a cuticle. For ten points, identify this term applied to the outer protective sheath of plants and the outermost layer of skin in animals.**

ANSWER: epidermis

- (13) This figure had commonly been depicted as a tree until the Gandharan art school personified this figure. The Toba rulers claimed to be incarnations of this figure. This figure is not Christ, but the Feast of All Souls is a festival in a religion venerating this figure. Some made Mani known as this figure “of the Light”, and this figure notably encountered a corpse, and ascetic, and a diseased man in his travels. He took the(*) Middle Way and sat under a Bodhi tree in order to experience an awakening. For ten points, name this figure who championed the Eightfold Path in response to the Four Noble Truths and achieved Enlightenment.

ANSWER: Gautama Buddha (accept Siddhartha Gautama or Shakyamuni)

- (14) A proverb of this location says “in seed time learn, in harvest teach, in winter enjoy” and was written by William Blake in a collection that described a marriage of this location. A statue describes this as a place “where you have nothing to do but amuse yourself” in the part of George Bernard Shaw’s play *Man and Superman*, which describes Don Juan in this place. This location titles a collection which includes *The Alchemy of the Word*, Arthur Rimbaud’s(*) *A Season in [this place]*, and Garcin says that this place “is other people” in John Paul Sartre’s *No Exit*. For ten points, identify this location which Virgil brings Dante to in the first section of *The Divine Comedy*.

ANSWER: Hell (accept Inferno or l’enfer, accept Heaven before the end of the Shaw quote)

- (15) This man explained that those with the “moral courage to go to jail” allowed humanity out of the jungles. This man wrote a book explaining the deficiencies in the American prison system called *Walls and Bars*. This man founded a group whose motto was “an injury to one is an injury to all” with Bill Haywood, and he led an event that obstructed U.S. mail since it protested a luxury(*) train car company. His speech in Canton, Ohio led to a sedition trial in which he was sentenced to ten years in prison, from where he ran for president. For ten points, name this founder of the Industrial Workers of the World who led the Pullman Strike.

ANSWER: Eugene Victor Debs

- (16) Most of the information we have on this ruler comes from Priscus. The son of Mundzuk, this ruler along with his older brother signed the Treaty of Margus. In order to escape having to marry a Roman nobleman, Honoria sent this man a ring, which he mistook for a sign of marriage. Pope Leo I negotiated to stop this man from attacking Rome, and after marrying Ildico, he died due to a(*) nosebleed. His brother Bleda supposedly died in a hunting accident. Defeated by Theodoric I and Flavius Aetius at the Battle of Chalons, for ten points, name this “Scourge of God,” who led the Huns.

ANSWER: Attila the Hun

- (17) The spin-transfer form of this phenomenon is the namesake of a form of magnetic RAM currently in development. The Trouton-Noble experiment attempted to measure this phenomenon for a parallel-plate capacitor in the presence of a luminiferous aether. A system free of this phenomenon makes the right hand side of Euler’s equations equal zero. In an electric field, it is equal to the dipole moment crossed with(*) field strength. A source of precession, this phenomenon, symbolized tau, it is calculated as the cross product of force and length of the lever arm. Equal to the time derivative of angular momentum, for ten points, name this rotational analogue of force.

ANSWER: torque

- (18) This man painted his father Benjamin in *The Writing Master*, and in another work, a man in a wood-panelled room watches the title figures, *The Chess Players*. This artist portrayed three young nude figures playing pipes in *Arcadia*. He included himself upriver while the title figure looks over his shoulder sitting in a boat on the Schuylkill River in(*) *Max Schmitt in a Single Scull*. This artist showed six figures bathing in *The Swimming Hole* and painted the title man treating a case of osteomyelitis of the femur in a surgical theater at Jefferson Medical College. For ten points, identify this American painter of *The Gross Clinic*.

ANSWER: Thomas (Cowperthwait) Eakins

- (19) **One character in this series played guitar alongside Lulu and Evan as a member of the Indigo-Go's and dies after washing up on Great Bay Coast. In this series, the protagonist goes to the Stock Pot Inn to reunite Kafei with Anju and the Great Deku tree survives a flood. The timeline of this series splits into three parts due to time travel and the hero's success rate. (*) Princess Ruto and King Zora XVI lead one faction in this series, and Tetra and Sheik are alter egos of its eponymous character. For ten points, name this video game series in which Ganondorf is defeated by Link, who saves the title princess.**

ANSWER: The Legend of Zelda

- (20) **This author wrote about an "old man" in Lofoten who watched both his brothers drown before appreciating the beauty of a whirlpool in *A Descent into the Maelstrom*. In another story by this man, Kate and Bobby get to marry when two circumnavigators meet and experience three Sundays in a week. In one story, Lady Rowena transforms into the title character, and in another, Prince Prospero throws a ball to guests trying to escape from a plague. This author of *Ligeia* and (*) *The Masque of the Red Death* wrote a short story in which the narrator visits Madeleine and Roderick and sees the title structure fall. For ten points, identify this author of *The Fall of the House of Usher*.**

ANSWER: Edgar Allan Poe

- (21) **A former Minister of Culture and Communication from this nation explained how he frequented male brothels in Bangkok in his *The Bad Life*. One person from this country stated that, due to tax evasion, she expected payback for the Greeks. This nation recently aided Ibrahim Keita by fighting jihadists in Mali. A proposed tax increase on millionaires in this country led one of its actors to seek Russian citizenship, and the current leader of the (*) IMF is from this country. In 2010, this country passed a burqa ban. For ten points, name this country that was formerly led by Nicolas Sarkozy and whose current leader is Francois Hollande.**

ANSWER: France (accept French Republic or République française)

Bonuses

- (1) One man with this last name taught the Bluth children lessons using a fake arm. For ten points each:
- [10] Name this word that is also the title of Henry Bendix, the man who leads the Stormwatch.
- ANSWER:** Weatherman
- [10] The weatherman Brick Tamland, played by Steve Carell, appears in this movie that focuses on the KVWN news show. Its climactic scene involves the dog Baxter pacifying a Kodiak bear.
- ANSWER:** Anchorman: The Legend of Ron Burgundy
- [10] The protagonist Ron Burgundy in *Anchorman* is played by this actor, who also starred as *Buddy* in *Elf*. This SNL veteran also played the villainous Jacobim Mugatu in *Zoolander*.
- ANSWER:** Will Ferrell
- (2) This man founded the Down-with-Imperial Union, and he tried to unify his country with its southern neighbor with the Koryo Confederation. For ten points each:
- [10] This man founded the Down-with-Imperial Union, and he tried to unify his country with its southern neighbor with the Koryo Confederation. For ten points each:
- ANSWER:** Kim Il-Sung (prompt on Kim)
- [10] Kim Il-Sung was the longtime ruler of this country, which is separated from its southern neighbor by the DMZ. It was led for seventeen years by Kim Il-Sung's son, Kim Jong-Il, and is currently led by his grandson, Kim Jong-Un.
- ANSWER:** North Korea (accept Democratic People's Republic of Korea or DPRK or Choson Minjujuui Inmin Konghwaguk, do NOT prompt on or accept "Korea" or "Republic of Korea")
- [10] North Korea runs on this ideology first formulated by Kim Il-Sung. It literally means "mainstream" or "subject" and advocated for a country being self-reliant.
- ANSWER:** Juche

- (3) In this novel, a newspaper predicts events, like a poet's reading of his newest poem and the on-stage death of Zaim, so that the morning editions can be extremely timely. For ten points each:
- [10] Identify this novel in which Ka comes to Kars and re-unites with Ipek, who, like her sister Kadife, are both involved with Blue. Kadife is initially forced, then chooses, to remove her headscarf on television.
ANSWER: Snow (or Kar)
- [10] This Turkish man was the narrator and author of *Snow*. He also wrote *The Black Book* and *The Museum of Innocence*.
ANSWER: (Ferit) Orhan Pamuk
- [10] After meeting with Sheikh Sadettin, Ka believes that his poems were inspired by this figure, despite a previous nonbelief. Necip imagines a terrifying landscape if this being didn't exist.
ANSWER: God (or Allah)
- (4) Quantum tunneling between the n - p junction of certain diodes allows them to exhibit the negative form of this quantity. For ten points each:
- [10] Name this quantity that measures a circuit's opposition to a passing current. Impedance is the sum of both this quantity, which only applies to DC currents, and reactance.
ANSWER: resistance
- [10] One way to calculate the resistance of a wire is by multiplying this value, the inverse of conductivity, by the length of the wire over its cross sectional area. This value is constant for a material no matter the size of the wire.
ANSWER: resistivity
- [10] This circuit arrangement uses three resistors with known resistances in order to measure the resistance of a fourth unknown resistor. These devices, invented by Samuel Christie, were modified for lower resistances by Lord Kelvin.
ANSWER: Wheatstone bridge
- (5) This figure became immortal after the river god Numicus cleansed him and bathed him with Ambrosia and Nectar. For ten points each:
- [10] Name this hero who led the Dardanians during the Trojan War. The exploits of this eventual founder of Rome were narrated in an epic poem by Virgil.
ANSWER: Aeneas
- [10] One of Aeneas's lovers was this daughter of Belus II. This woman covered the Hill of Byrsa with oxhide and killed herself on a pyre after Aeneas left.
ANSWER: Dido (also accept Elissa)
- [10] Aeneas declares war on and eventually slays this king of the Rutuli for the hand of Lavinia, the daughter for Latinus. During the war, this man killed Evander's son, Pallas.
ANSWER: Turnus

- (6) One character rescues Mrs. Waters from Ensign Notherton, sleeps with her, and later finds out that she's his mother. For ten points each:
- [10] Identify this novel named for the title foundling who is looked after by Squire Allworthy and falls in love with Sophia Western.
ANSWER: The History of Tom Jones, a Foundling
- [10] *Tom Jones* is a novel by this author, who adapted his play about Tom Thumb into *Tragedy of Tragedies*.
ANSWER: Henry Fielding
- [10] Henry Fielding wrote about this character trying to seduce Squire Booby in one work, and about her brother in *Joseph Andrews*. In the novel named for her, written by a different author, her master Mr. B is the one trying to seduce her, but she refuses until he proposes, allowing her virtue to be rewarded.
ANSWER: Pamela or Shamela
- (7) Its Modoki variant is believed to be caused by global warming. For ten points each:
- [10] Name this periodic warming of the Pacific Ocean off the coast of South America. Peruvian fisheries are often devastated by this event.
ANSWER: El Niño (or ENSO, accept El Niño-Southern Oscillation but DO NOT reveal this alternate answer unless given)
- [10] El Niño, along with La Niña, is paired with this atmospheric system involving fluctuation in air pressure. Its strength is measured on a namesake index as the difference in air pressure between Tahiti and Darwin.
ANSWER: Southern Oscillation
- [10] El Niño is caused when this system of air movement weakens, causing trade winds not to converge on northern Australia but rather on the eastern Pacific. Part of the Hadley circulation, it models the air flow in the troposphere of the tropics.
ANSWER: Walker circulation (accept Walker cell)
- (8) This artist's early Cubist influence can be seen in his *Portrait of Zinoviev*. For ten points each:
- [10] Name this artist who depicted a man in a white suit and a yellow sombrero in *The Flower Carrier*. Mexico City is home to a series he painted on Aztec civilization.
ANSWER: Diego Rivera
- [10] This medium, which involves painting directly onto a ceiling or wall, was used by Rivera for his *Detroit Industry* and *Man at the Crossroads*.
ANSWER: mural (prompt on "fresco")
- [10] Rivera's *Man at the Crossroads* was removed from the Rockefeller Center for depicting this person holding hands with a group of people at a May Day parade.
ANSWER: Vladimir Ilyich Lenin

- (9) This paradigm was preceded by functional and structured programming. For ten points each:
- [10] Identify this programming paradigm, exemplified by C++ and Java, which focuses on encapsulation and inheritance in its namesake entities.
ANSWER: object-oriented programming
- [10] Another common feature of object-oriented programming is this one in which methods act differently based on their input types. Overloading is a special example of this phenomenon.
ANSWER: ad hoc polymorphism
- [10] An example of polymorphism in Java is that this symbol is used to concatenate strings, although it has a different effect on numerical data types.
ANSWER: addition sign or plus sign (accept equivalents)
- (10) This man fought in the Farroupilha rebellion as well as serving in the Uruguayan Navy. For ten points each:
- [10] Name this soldier who fought for Italian unification, commander of the “red shirts” who led the Expedition of the Thousand to the Kingdom of Two Sicilies.
ANSWER: Giuseppe Garibaldi
- [10] Another leading figure during the Risorgimento was this Italian politician who allied with Urbano Rattazzi. He was appointed as the first Prime Minister of Italy by Victor Emmanuel II.
ANSWER: Camillo Benso, Count of Cavour (accept either)
- [10] This other Italian politician served as the Prime Minister of Italy from 1963 to 1968 and later from 1974 to 1976. He was killed after 55 days of being held hostage by the Red Brigades.
ANSWER: Aldo Moro
- (11) This man traveled on five Udasis. For ten points each:
- [10] Name this man who was the first guru of a religion that he founded, whose current guru is the *Adi Granth*. His teachings are found in the *Gurmukhi*.
ANSWER: Guru Nanak
- [10] Guru Nanak was the founder of this monotheistic religion that requires its followers to wear uncut hair and a sword as part of its “Five K’s”.
ANSWER: Sikhism
- [10] Sikhism has this symbol that represents God’s unity. This word is also near the beginning of many Sikh texts.
ANSWER: Ik Onkar

- (12) In one scene of this play, Moss threatens to turn in Aaronow if he doesn't commit a robbery and the alibi-less Moss is caught. For ten points each:
- [10] Identify this play, in which Shelley Levene steals the leads from Mitch and Murray and sells them to Graff.
ANSWER: Glengarry Glen Ross
- [10] *Glengarry Glen Ross* was written by this playwright, who wrote about Don, Teach, Bobby, and an under-priced nickel in *American Buffalo*.
ANSWER: David Alan Mamet
- [10] Mamet collaborated with this other author on *Things Change*. This author is probably best known for children's stories like *The Giving Tree* and poems like *A Light in the Attic* and *Where the Sidewalk Ends*.
ANSWER: Sheldon Allan "Shel" Silverstein
- (13) This organization utilized Kontors, or counting houses, and was expelled from England by Elizabeth I. For ten points each:
- [10] Name this medieval trade union, centered around cities such as Visby and Lubeck, whose decline later gave way to the Kalmar Union.
ANSWER: Hanseatic League (or Hanse or Hansa)
- [10] The Hanseatic League was often harassed by this group of former privateers turned pirates. These successors to the Victual Brothers had a leader, Klaus Störtebeker, who got his name from his ability to drink four litres of ale in one gulp.
ANSWER: Likedeelers
- [10] The aforementioned Victual Brothers were hired to attack Queen Margaret I of this country, which had to give the Hanseatic League fifteen percent of its shipping profit after the signing of the Treaty of Stralsund. The League desired sea access around this country on the Jutland Peninsula.
ANSWER: Kingdom of Denmark
- (14) The Hammond-Leffler Hypothesis concerns the energy of these entities, which are local maxima on reaction coordinate diagrams. For ten points each:
- [10] Identify these entities which cannot be isolated because they only have partial bonds. They are sometimes known as the activated complex.
ANSWER: transition states
- [10] This value can be found by subtracting the starting energy of the reaction from the energy of the transition state. Catalysts modify the transition state in order to lower this value for a reaction.
ANSWER: activation energy
- [10] In one form of this equation, the activation energy is divided by the Boltzmann constant multiplied by temperature to give the rate constant of a reaction. Plotting the natural log of the rate constant obtained from this equation against one over T gives a line.
ANSWER: Arrhenius equation

- (15) This work argues against suicide and uses the argument of opposites to show the infinite cycle between life and death. For ten points each:
[10] Name this work that details the last dialogues of Socrates before his death. It provides arguments for the immortality of the soul and includes the Theory of Forms.
ANSWER: Phaedo
[10] *Phaedo* is a work by this student of Socrates, who outlined the Allegory of the Cave in his *Republic*.
ANSWER: Plato
[10] This other Platonic dialogue discusses the nature of friendship. In it, Socrates educates the title boy and his friend Menexenus, and this work rejects that desire and evil are the motivating cause of friendship.
ANSWER: Lysis
- (16) Answer the following questions about the geography of the British isles for ten points each:
[10] This country's highest point lies at Snowdon, and it is bordered by the Bristol Channel to its south and the Irish Sea to its northwest.
ANSWER: Wales
[10] This river is the longest that lies entirely in England. The city of London is located on the banks of this river, which empties into the North Sea.
ANSWER: Thames
[10] This name is given to the range of low lying mountains and hills that run through central England. The Aire Gap lies in this range, which joins the Cheviot Hills along the Scottish border.
ANSWER: Pennines
- (17) Hieronymus Bosch's *The Adoration of the Magi* is the basis for this opera. For ten points each:
[10] Name this NBC Christmas opera about the titular crutch-wielding boy, the first opera specifically composed for television in the United States. In it, the Mother tries to steal gold from a group of men returning from Jesus's birth.
ANSWER: Amahl and the Night Visitors
[10] This American composer of *Amahl and the Night Visitors* also wrote the libretto for a work set in 1950's Little Italy about Annina titled *The Saint of Blecker Street*.
ANSWER: Gian Carlo Menotti
[10] Menotti composed the libretto for this composer's opera about the lover of Anatol, *Vanessa*. The death of Franklin Delano Roosevelt saw this American composer's *Adagio for Strings* broadcast over the radio.
ANSWER: Samuel (Osborne) Barber II

- (18) This character narrates the story of Flora de Barral in *Chance* and the shipwreck of the Judea in *Youth*. For ten points each:
- [10] Identify this character, a ship captain who hears the story of a British seaman who abandons the S.S. Patna and willingly takes a bullet for the death of Dain Waris.
ANSWER: Charles Marlow
- [10] Marlow most notably appeared in this novella, where he travels down the Congo and lies to a widow that Kurtz's last words were her name, and not "The horror! The horror!"
ANSWER: Heart of Darkness
- [10] *Heart of Darkness* and *Lord Jim* were works by this author, who wrote a novel in which Charles Gould mistakenly trusts the title character to take silver out of Costaguana, *Nostromo*.
ANSWER: Joseph Conrad (or Jozef Korzeniowski)
- (19) This equation only holds true in populations not subject to migration or non-random mating. For ten points each:
- [10] Name this doubly-eponymous equation in evolutionary biology which in its expanded form states p squared plus $2 p q$ plus q squared equals one.
ANSWER: Hardy-Weinberg equation or law or theorem or model or rule
- [10] In the Hardy-Weinberg equation, the p and q each represent the frequency of one of these entities appearing in the given population. Dominant ones are represented with a capital letter, while recessive ones are represented with a lowercase letter.
ANSWER: alleles (do not accept genes)
- [10] The Hardy-Weinberg equilibrium fails when a population experiences this phenomenon, a form of genetic drift in which population size sharply declines in response to a destructive event and allele frequencies change dramatically.
ANSWER: population bottleneck (or bottleneck effect)
- (20) This proposal for the structure of the new United States Government was presented by William Paterson. For ten points each:
- [10] Name this plan giving one vote per state in a unicameral legislature. It was supported by the small states.
ANSWER: New Jersey Plan
- [10] The New Jersey Plan was opposed by this man, who formulated the Virginia Plan and who served as the first United States Attorney General.
ANSWER: Edmund Jennings Randolph
- [10] The New Jersey and Virginia plans were both competing to replace this document which established the early American government. It was written by the Continental Congress, but this precursor to the Constitution failed to stop Shay's Rebellion.
ANSWER: Articles of Confederation and Perpetual Union

(21) This composer used Hermann Mueller's *The Hurdy-Gurdy Man* in his lieder cycle *Winterreise*. For ten points each:

[10] Name this composer of *Rosamunde* whose Eighth Symphony is also referred to as his *Unfinished Symphony*.

ANSWER: Franz Peter Schubert

[10] Johann Hummel rearranged a septet for the instrumentation in this Schubert work, which features a piano, violin, viola, cello, and double bass. The song *Die Forelle* [READ: "dee for-ELL-uh"] is used in this work's fourth movement.

ANSWER: Trout Quintet or Piano Quintet in A Major

[10] This lieder composed by Schubert starts with the title figure claiming that "My peace is gone/ My heart is heavy" in response to the temptations of Faust.

ANSWER: Gretchen at the Spinning Wheel (or Gretchen am Spinrad)