

1. This disease's vector is responsible for carrying the causative agents of babesiosis and human granulocytic anaplasmosis. This disease's causative agent mutates its VlsE protein to dodge the immune system. When this disease reaches the brain, it causes astrogliosis. Its causative agent shares a genus with the agent that causes masters disease. A late complication of this disease is an arthritis caused by an immune reaction to OspA. Caused by the microaerophile spirochete known as *Borrelia burgdorferi*, one symptom of this disease is a red bullseye rash. This disease, which is carried by Ixodes ticks, is characterized by fever and headache. For 10 points, name this disease carried by deer ticks named for a Connecticut town.

ANSWER: **Lyme** disease

048-11-30-03102

2. One section of this work produces a picture of a cube in order to show that seeing two phenomena implies "we are really seeing two facts." The author compares this work to a ladder, which the reader must "throw away after he has climbed it." This work rejects the notion of "logical constants" that defined the writings of Frege and Russell as its "fundamental idea," and defines the world as "everything that is the case." It depicts facts in "logico-pictorial form." It begins with seven fundamental propositions, and claims that "what we cannot speak of we must pass over in silence." For 10 points, name this work by Ludwig Wittgenstein, whose ideas were redacted in *Philosophical Investigations*.

ANSWER: **Tractatus Logico-Philosophicus** [or **Wittgenstein's Tractatus**]

033-11-30-03103

3. One character in this work creates a golden statue of a woman to replace his dead wife; that character creates an iron plow in order to plow a field of vipers. Near the end of this work, a virgin conceives a miraculous child after swallowing a cranberry. An anti-hero in this work murders Untamo and sleeps with his own sister, causing her to kill herself, then falls upon his own sword. Various chapters in this work describe the smith god Ilmarinen and the wicked Kullervo. This work is written in trochaic tetrameter, and it begins by describing the birth of Vainamoinen. For 10 points, name this work of Elias Lonnrot, a compilation of Finnish myths.

ANSWER: *The* **Kalevala**

080-11-30-03104

4. One writer with this surname, William, edited the first British edition of Whitman's poems and was the chief editor of the literary magazine *The Germ*. Another writer with this surname wrote "A Sonnet is a moment's monument" in the introductory poem of his sonnet sequence *The House of Life*. This name was shared by one writer who penned "In the Bleak Midwinter" and another who wrote of a woman leaning "out from the gold bar of Heaven" in "The Blessed Damozel." The former author of this name wrote about Laura and Lizzie's encounter with fruit sellers in "Goblin Market." For 10 points, give this surname shared by English poets Dante and Christina.

ANSWER: **Rossetti**

015-11-30-03105

5. In one appearance, this character suggests winning a map game by finding a word which stretches across the whole map. This character tells of a clever boy who wins all the marbles at his school by knowing how intelligent his opponents are. This character is based on the real life Eugène François Vidocq and uses the method of "ratiocination." In one appearance, this character uses newspaper accounts alone to surmise that a lone sailor is responsible for the death of Marie Roget. In one story, he determines that confused witness accounts about which language was spoken implies that no human language was spoken at all. For 10 points, name this character who finds "The Purloined Letter" and solves "The Murders in the Rue Morgue," a French detective created by Edgar Allen Poe.

ANSWER: C. Auguste **Dupin**

015-11-30-03106

6. Lakes lying along this river include Milner Lake and Lake Walcott near Burley and the Sawtooth National Forrest. The travel of trappers along this river was limited by the lava banks in the area surrounding the tributary of Henry's Fork, as well as fear after a massacre near Pierre's Hole. Contemporary uses of this river include irrigation in the fertile Palouse Hills region and large hydroelectric projects like the Ice Harbor Dam located near Pasco where this river ends. This river's largest tributary is the Salmon River, which it meets just after flowing through Hells Canyon. For 10 points, identify this river that flows through Wyoming, Idaho and Oregon before becoming the largest tributary to the Columbia River.

ANSWER: **Snake** River

110-11-30-03107

7. The exiled Dante Alighieri did in this city after spending his last three years there. Julius Caesar massed his forces in this city before crossing the Rubicon. Despite the death of their commander Gaston de Foix, the French sacked this city in 1512 after winning a War of the League of Cambrai battle here. After holding out for three years, Odoacer was finally killed in the siege of this city by Theodoric. Honorius made this city the official Western capital in 402, and served as the capital of Ostrogoth and Byzantine rule of Italy. For 10 points, name this city in Northern Italy.

ANSWER: **Ravenna**

015-11-30-03108

8. This experiment was intended to provide data useful in a future experiment to test Charles Sanders Peirce's hypothesis that the wavelength of an atomic spectral line could be used as a standard unit of length. One of the experimenters suggested using a sandstone-and-mercury support for its critical device after a previous attempt had failed in Potsdam. A follow-up to this experiment used that device to detect variations due to the Earth's rotation; that experiment by Kennedy and Thordike also failed to observe a fringe shift of 0.4 as expected. That device used in this experiment included two mirrors and a half-silvered glass plate and is known as one namesake's interferometer. For 10 points, name this 1887 experiment that failed to prove the existence of a stationary ether.

ANSWER: **Michelson-Morley** experiment

023-11-30-03109

9. In 1982, Damien Hurst painted one of these animals for his hairdresser girlfriend in a painting that was deemed worthless by Sotheby's. A Jan Steen painting in which a group of them sit on a table is titled after their "family." Louis Wain is best known for painting these animals with large eyes. A bucket of water and three of these animals fly through the air in the photograph *Dali Atomicus*. A Donatello equestrian statue of Erasmo of Narni is usually named for a nickname meaning a "honeyed" one of these animals. On the far right of Manet's *Olympia*, a black one of these animals stands on the bed. For 10 points, name these animals often depicted in Egyptian tombs.

ANSWER: **cats**

015-11-30-03110

10. Lincoln Chafee's great-uncle, Zechariah, denounced these events as a sad irony due to the religion of their perpetrator. These events were checked by the actions of Louis Freeland Post and the case *Colyer et al. v. Skiffington*. Some targets of these events, which were led by a man nicknamed the "Fighting Quaker," were placed on the ship *Buford*, nicknamed the "Soviet Ark." These events were prompted by the Boston Police Strike and a series of letter bombs, which stirred up anger towards activists like Emma Goldman. For 10 points, name this series of events during the end of the 1910's that saw the namesake Attorney General order the arrest and deportation of many radical leftists.

ANSWER: **Palmer Raids** [prompt on **Red Scare**]

052-11-30-03111

11. In this play two marquises make a secret compact to work together to gain the affection of the title character's love interest. This play ends with Dubois telling the central character that he has lost a lawsuit. A sonnet that compares hope to a lady is picked apart by the title character, who offers a street song in a response mocking the poet's author, Oronte. Earlier in this play, Philinte disagrees with the protagonist over whether people should always say what they think, and the title character eventually turns down the love of Celimene to live as a hermit in exile of society. For 10 points, name this Moliere play whose title character, Alceste, detests humanity.

ANSWER: *The **Misanthrope*** [or *Le **Misanthrope***]

094-11-30-03112

12. This scientist identified the first ring chromosome, and also noticed that its structure would be lost at meiosis. Along with Blumenschein and Kato, this scientist published a landmark evolutionary study on their favorite model organism, and this scientist also characterized the suppressor-mutator or SPM element. This biologist discovered the nucleolar-organizing region in an early experiment, and in a more famous experiment characterized the behavior of the Ac and Ds elements. This biologist noted that changes in aleurone color from generation to generation could be explained by genomic mutability, but her work was met with much skepticism. For 10 points, name this biologist who used *Zea mays* to discover transposons.

ANSWER: Barbara **McClintock**

048-11-30-03113

13. Ralph Kirkpatrick catalogued the complete works of one composer with this last name. Another composer with this last name established the allegro-adagio-allegro form of the Italian overture and was a key figure in the development of Neapolitan opera. A composer with this last name traveled to Portugal, where he became the music teacher of the future Spanish queen Maria Barbara, who inspired the creation of hundreds of single-movement binary works. That composer with this last name became famous after his death for his 555 keyboard sonatas. For 10 points, give this last name shared by the Baroque Italian composers Alessandro and Domenico.

ANSWER: **Scarlatti**

004-11-30-03114

14. Before this view was officially adopted, it was supported by the Spanish monk Guido Terrena. Proponents of this religious doctrine point to John 11:49, where God grants the power of prophecy to Caiaphas, the judge who condemns Jesus, as proof that God can grant power even to people with moral shortcomings. Opponents of this doctrine point to the apparent endorsement of Monothelism by Honorius I. This dogma applies only to statements made ex cathedra about theology. It was first invoked in 1950 about the Assumption of Mary, but was first articulated in 1870 at the First Vatican Council. For 10 points, name this dogma of the Catholic Church, which says that in some circumstances its leader can never be wrong.

ANSWER: **Papal Infallibility**

021-11-30-03115

15. This method is used to look at labelled protein samples in SILAC and ICAT proteomics. Rhenium filaments are used in thermal approaches to this. One way of preparing samples for this technique involves small volumes of electrically conductive liquid exposed to an electric field. That can result in cones and involves charged particles in aerosol. Analyzers used in this technique include time of flight and quadrupole ion traps. While preparation with MALDI and electrospray ionization is useful, this technique generally involves the Lorentz and centripetal force and the most abundant particle is the base peak. For 10 points, name this technique that separates ions based on their ratio of charge to its namesake property.

ANSWER: mass spectroscopy

107-11-30-03116

16. One leader of this movement, John Erskine, fought the Duke of Argyll to a draw at the Battle of Sheriffmuir. Carolina Nairne's song "Will Ye Nay Come Back Again" was written in homage to this movement. One of this movement's leaders, George Murray, was responsible for a major victory at Prestopans. George Frideric Handel's piece *See the Conquering Hero Comes* was composed in honor of the Duke of Cumberland's victory against this group. One of its leaders was defeated at the 1746 Battle of Culloden Moor. For 10 points, name this group that attempted to place descendants of James II such as the Old Pretender and Bonnie Prince Charlie on the English throne.

ANSWER: Jacobites

030-11-30-03117

17. This author wrote about the slave ship dealer Augustus Pemberton becoming a part of Dr. Sartorius's experiments on rich, old men in *The Waterworks*. The title character of another novel befriends Lulu Rosenkrantz and the hunchback accountant Otto "Abbadabba" Berman. He wrote about Oscar the Amorous Octopus attacking Norma while she performs an underwater striptease in his novel *World's Fair*, while the title character of another work witnesses the murder via concrete boots of Bo Weinburg, a member of Dutch Schultz's gang. This author wrote a novel in which Younger Brother is infatuated with Evelyn Nesbit, the murderer of the architect Stanford White. For 10 points, name this American author of *Billy Bathgate* and *Ragtime*.

ANSWER: (E)dgar (L)awrence Doctorow

030-11-30-03118

18. One cartoon drawn of this man shows him looking out a window while lamenting, "there are worse places than a front porch!" This man's actions during one event led to his being jailed as part of the Woodstock Eight. One organization co-founded by this man held a pageant in Paterson, New Jersey to dramatize the plight of workers during that city's strike. This man later helped found a political party on whose ticket he ran five times. This man campaigned for that party on the Red Special train and had his party's highest election showing with almost one million votes while running for president from prison. For 10 points, name this early 1900s perennial Socialist candidate.

ANSWER: Eugene Victor Debs

081-11-30-03119

19. Carney Landis studied this psychological phenomenon in an experiment about facial expressions in which two-thirds of his participants agreed to decapitate rats. In one experiment about these phenomena, students were told they were being given a fictional eye-sight improving drug called Superoxin. The Cannon-Bard model replaced the earlier James-Lange theory that argued they occur in response to an outside stimulus. Jerome Singer and Stanley Schachter created the two-factor theory of them, while Paul Ekman's study of the Fore tribesmen helped him identify six common ones such as disgust. For 10 points, name these psychological states including anger and happiness.

ANSWER: emotions

109-11-30-03120

20. Though Charles Mingus typically played bass, he switched to this instrument on the *Oh Yeah* album. The absence of this instrument is a hallmark of free jazz. The man who invented the "trumpet-style" way of playing this instrument claimed to have been playing it before meeting Louis Armstrong. That man, Earl Hines, replaced Armstrong's wife Lil Hardin on this instrument for the 1928 Hot Five recordings. Willie "The Lion" Smith, James P. Johnson, and Fats Waller were masters of the "stride" style of this instrument. A "player" version of this instrument played automatically by reading namesake perforated rolls. For 10 points, name this instrument which often performs solo in ragtime recordings.

ANSWER: **piano**

003-11-30-03121

21. This story takes place in the time when the "land was entirely filled with fairy power." The narrator forces one figure to burn his books and asks that God send misers a true pestilence. The narrator of this story talks about Jesus and a Samaritan woman. The Friar complains about the length of the Prologue of this tale, which leads the narrator to claim that there is no incubus except the friars who dishonor women. The answer to the central question in this tale is "To have mastery over men." For 10 points, name this Canterbury Tale in which a knight must find the answer to the question of "What is that women most desire?", a story told by Alisoun, who has had five husbands.

ANSWER: The **Wife of Bath's** Tale

001-11-30-03122

22. This battle saw the capture of Psyttaleia by a recently turned general named Aristides. One side included the female general Artemisia, which prompted her leader to note that his female general became a man and his male generals became women. Accounts differ over whether an early retreat by Adeimantus at this battle was out of cowardice or to force the enemy into an enclosed area. This battle was fought after one sided retreated following the Battle of Artemisium and included a force led by Eurybiades of Sparta. During it, Themistocles led a force of about 270 triremes that opposed a force sent by Xerxes I south of the Isthmus of Corinth. For 10 points, name 480 B.C. battle, a decisive Greek naval victory against the Persians.

ANSWER: Battle of **Salamis**

064-11-30-03123

23. One group named for this man is a six-dimensional non-compact Lie group represented as $SO(1,3)$ ["S O of one comma three"] With a Danish physicist, this man independently discovered a relation between temperature and index of refraction. This scientist noted that an observer of an object traveling near the speed of light would see its length contract, an effect he names with Fitzgerald. This man's factor is proportional to the square root of one minus the square of the relative velocity divided by the square of the speed of light. For 10 points, name this Dutch physicist who developed a transform used for observations in special relativity and names the magnetic force felt by a moving charge.

ANSWER: Hendrik **Lorentz**

064-11-30-03124

1. The emblem for this religion contains five swastikas and four yin-yang symbols. For 10 points each:
[10] Name this religion, which holds that space aliens have corrupted most of the world's leaders and that the world is due for a "Dharma-ending period."

ANSWER: **Falun Gong** [or **Falun Dafa**]

[10] The Falun Gong movement is heavily influenced by this earlier tradition of Chinese mysticism, whose foundational text was written by Lao Zi.

ANSWER: **Taoism** [or **Daoism**]

[10] Key to Taoism is this concept of "action through inaction," or "going with the flow" of the universe.

ANSWER: **wuwei**

015-11-30-03201

2. Name the following about the Hippo pathway, which controls tissue growth in animals. For 10 points each:

[10] Several components of the Hippo pathway in humans act as these types of proteins, more famous ones of which include BRCA and p53. As opposed to oncogenes, they generally arrest the cell cycle.

ANSWER: **tumor suppressors**

[10] The Hippo pathway has an important role in restraining cell proliferation and promoting apoptosis in the differentiating type of these cells. It is one of the four types of tissues along with connective, muscle and nervous tissue.

ANSWER: **epithelial cells** [or **epithelium**]

[10] Fat4 is a transmembrane protein in the Hippo pathway that is a proto- type of these proteins. These cell adhesion proteins require calcium 2+ ions to function and ensure that cells within tissues are bound together. They come in E and N varieties.

ANSWER: **cadherins** [or **calcium-dependent adhesion proteins**]

066-11-30-03202

3. Although the Army of the Ten Thousand acquitted themselves well, Cyrus the Younger died during this battle, leaving Artaxerxes II king of Persia. For 10 points each:

[10] Name this 401 BC battle in between Greek mercenaries and the Persian army.

ANSWER: Battle of **Cunaxa**

[10] The battle and the march of the ten thousand mercenaries were documented by this Greek historian in his *Anabasis*.

ANSWER: **Xenophon**

[10] Xenophon wrote an embellished biography of this other Persian leader, who made his capital at Pasargadae after founding the Persian Empire.

ANSWER: **Cyrus the Great** [prompt on **Cyrus**]

015-11-30-03203

4. Name these Cavalier poets, for 10 points each.

[10] In addition to writing plays like *Bartholomew Fair* and *Volpone*, this author requested “Drink to me only with thine eyes” in his poem “To Celia.”

ANSWER: Ben **Jonson**

[10] This author collected many of his poems in *Hesperides*, and began one of his poems “Gather ye rosebuds while ye may.”

ANSWER: Robert **Herrick**

[10] This playwright of *The Goblins* began one of his verses “Why so pale and wan, fond lover?”

ANSWER: Sir John **Suckling**

015-11-30-03204

5. Murals indicate that the rite of “bull-leaping” was important to this culture, which was largely explicated by Arthur Evans and whose relics include the Phaistos Disc. For 10 points each:

[10] Name this civilization that inhabited Crete.

ANSWER: **Minoans**

[10] Minoan history is divided into four periods based on the use of these structures. The largest of them was Knossos.

ANSWER: **palaces**

[10] Research on the Minoans is held up by the fact that this script that they used has yet to be deciphered.

ANSWER: **Linear A**

015-11-30-03205

6. Ladles hang in the upper right of this painting, as a boy carrying a flask and a melon stand next to the title figure. For 10 points each:

[10] Name this painting in which an old woman in a white shawl holds a spoon over a pot.

ANSWER: ***Old Woman Frying Eggs*** [or ***Old Woman Cooking Eggs***]

[10] *Old Woman Frying Eggs* is a painting by this artist, who also showed a nude, reclining female staring into a mirror held by a cherub in *The Rokeby Venus*.

ANSWER: Diego **Velazquez**

[10] Velazquez also created this painting which shows the dwarves Maribarbola and Nicolas Pertusato, along with a young Margaret Theresa of Spain.

ANSWER: *Las **Meninas*** [or *The **Maids of Honor***]

088-11-30-03206

7. This man was one of the anarchists who was tried in the "Trial of the Thirty," and he served in the War Ministry and he was the Director of the Bernheim-Jeune Art Gallery from 1906-1925 For 10 points each:

[10] Identify this man whose best known work is a collection of short pieces about the despair of modern life, which he published anonymously in the newspaper *Le Matin*, titled *Novels in Three Lines*.

ANSWER: Felix **Feneon**

[10] At the Eighth Impressionist Exhibition in 1886, Feneon described the evolution of a new movement, which he called Neo-Impression. Feneon was impressed by this man's *Sunday Afternoon on La Grande Jatte*, which was displayed at the exhibition.

ANSWER: Georges-Pierre **Seurat**

[10] Feneon was an editor at this French newspaper, which has a conservative bent. Its name comes from a character created by Beaumarchais.

ANSWER: *Le **Figaro***

108-11-30-03207

8. Name these 20th century African leaders, for 10 points each.

[10] An insurgent against Ian Smith and Rhodesia, this leader of the ZANU-PF has led Zimbabwe since 1980.

ANSWER: Robert Gabriel **Mugabe**

[10] This man served as the first democratically elected president of the Republic of Congo for ten weeks until he was deposed and assassinated.

ANSWER: Patrice Emery **Lumumba**

[10] This supporter of the Non-Aligned Movement served as the first president of Zambia and remained in power until 1991.

ANSWER: Kenneth David **Kaunda**

015-11-30-03208

9. Known as the “father of the string quartet,” this composer’s *Farewell Symphony* called for the musicians to stop playing and walk off the stage. For 10 points each:

[10] Name this composer of over one hundred symphonies, including *Drumroll* and *Surprise*.

ANSWER: Franz Joseph **Haydn**

[10] Haydn was widely acclaimed for this oratorio, which uses the Book of Genesis and Paradise Lost to describe scenes like the emergence of bodies of water and the defeat of Satan.

ANSWER: *The **Creation*** [or *Die **Schöpfung***]

[10] This symphony, which reworks some of his incidental music for a Jean-Francois Regnard play, includes a finale in which the musicians realize they have not tuned their instruments and begin doing so on stage.

ANSWER: Symphony No. **60** [or *the **Distracted***]

015-11-30-03209

10. Aztecs were often buried with a cremated dog, who helped them get here. For 10 points each:

[10] Name this nine-leveled underworld of Aztec myth.

ANSWER: **Mictlan**

[10] This feathered serpent, the chief deity of Aztec myth, created mankind from the bones of the dead that he retrieved from Mictlan.

ANSWER: **Quetzalcoatl**

[10] Quetzalcoatl was aided in that task by this twin brother of his, often depicted as a skeleton. He guides the sun on its nightly trip through Mictlan.

ANSWER: **Xolotl**

079-11-30-03210

11. During the Revolutionary War, this state was the site of the Battle of King’s Mountain and Pyle’s Massacre. For 10 points each:

[10] Name this state whose governor William Tryon prompted a protest by building a massive palace at New Bern.

ANSWER: **North Carolina**

[10] That 1768-1771 North Carolina uprising was known by this name, and ended when the militia defeated its namesake movement at Alamance Creek.

ANSWER: War of the **Regulation** [or **Regulator** War; accept equivalents]

[10] Forces calling themselves regulators also fought this 1787 rebellion in western Massachusetts that revealed some weaknesses in the Articles of the Confederation.

ANSWER: **Shays’** Rebellion

015-11-30-03211

12. She wrote “come and see my shining palace built upon the sand!” in “Second Fig.” For 10 points each:
[10] Name this American poet of *The Ballad of the Harp-Weaver* and *A Few Figs from Thistles*.

ANSWER: Edna St. Vincent **Millay**

[10] Millay’s most famous verse concerns one of these objects that “burns at both ends” and “will not last the night.”

ANSWER: **candle**

[10] Millay wrote “East and West will pinch the heart that can not keep them pushed apart” in this poem, which built her reputation and which begins “All I could see from where I stood was three long mountains and a wood.”

ANSWER: “**Renascence**”

015-11-30-03212

13. This object and its companions are bridged by a stream that is a notable example of a high velocity cloud. For 10 points each:

[10] Name this irregular dwarf galaxy, the third closest galaxy to the Milky Way, and which contains the Tarantula Nebula.

ANSWER: **Large Magellanic Cloud**

[10] This relatively recent type II supernova of Sanduleak occurred in the LMC.

ANSWER: SN **1987A**

[10] Because the LMC contains many of these standard candles, they are often used to measure its distance from Earth. A systematic uncertainty in these object's period-luminosity relationship is the effect of metallicity.

ANSWER: **Cepheid variables**

066-11-30-03213

14. Answer some questions about formal syntax, for 10 points each.

[10] This syntactician revised his X-bar theory of binary syntax into the Minimalist program. He also believes transformations are an innate part of universal grammar and publishes left-wing tracts at MIT.

ANSWER: Avram Noam **Chomsky**

[10] In the X-bar model of English syntax, this necessary component of a phrase is modified afterwards by complements and beforehand by up to one specifier. Examples include the word “go” in the verb phrase “never go shopping.”

ANSWER: **head** word [accept **head** phrase]

[10] Chomsky used this five-word nonsense sentence in *Syntactic Structures* to demonstrate that syntax is independent of meaning.

ANSWER: “**colorless green ideas sleep furiously**”

104-11-30-03214

15. In this novel, Boris kills himself during an initiation into a student secret society when the pistol they give him is accidentally is with real bullets. For 10 points each:

[10] Name this novel in which Edouard plans to write a book of the same name and has an affair with Oliver, whose younger brother George gets caught up in a criminal ring.

ANSWER: *The* **Counterfeiters** [or *Les Faux-monnayeurs*]

[10] This 20th century French author of *The Counterfeiters* wrote about shocking adventures of Michel in *The Immoralist*.

ANSWER: Andre **Gide**

[10] Gide wrote an essay for the collection *The God That Failed*, which also featured an essay this author who wrote about Nicholas Rubashov's imprisonment in *Darkness at Noon*.

ANSWER: Arthur **Koestler**

015-11-30-03215

16. This man's novel *The Last Puritan* was a surprise best seller. For 10 points each:

[10] Name this Spanish American philosopher who wrote that "Those who cannot remember the past are condemned to repeat it" in *The Life of Reason*.

ANSWER: George **Santayana**

[10] In the title of one work, Santayana paired this philosophy with "animal faith." Aenesidemus founded the ancient school of this philosophy known as Pyrrhonism.

ANSWER: **skepticism**

[10] While at Harvard, Santayana argued that understanding why something is beautiful enables an understanding of the separation between the transitory and the universal in this book on aesthetics.

ANSWER: *The **Sense of Beauty***

015-11-30-03216

17. The author of this novel excerpted a court martial scene as the play *Clevinger's Trial*. For 10 points each:

[10] Name this Joseph Heller novel in which Yossarian serves in the U.S. Air Force on the island of Pianosa.

ANSWER: **Catch-22**

[10] This character from *Catch-22* is a profiteer who tries to solve his cotton glut by covering cotton in chocolate and selling it in the mess hall.

ANSWER: **Milo** Minderbinder [or Milo **Minderbinder**]

[10] This man is Yossarian's navigator and often appears smoking a pipe. He rapes the peasant girl Michela rather than buying a prostitute because he "has never had to pay for it."

ANSWER: Captain **Aardvark** [or **Aarfy**]

015-11-30-03217

18. This is also known as the hard sphere radius. For 10 points each:

[10] Name this radius used to model the volume an atom or molecule takes up. Its Dutch namesake also names an equation of state.

ANSWER: **van der Waals** radius

[10] This special case of the Mie potential models interactions between molecules uses a negative twelfth term for repulsive forces and a negative sixth power for attractive London dispersion forces.

ANSWER: **Lennard-Jones** potential

[10] This function denoted $g(r)$ (g of r) gives the probability of finding a molecule in a distance r from another molecule.

ANSWER: **radial distribution function** [or **pair correlation function**]

001-11-30-03218

19. Name these London buildings for 10 points each:

[10] This cathedral designed by Christopher Wren after the Great Fire contains a "whispering gallery" and a bell known as "Great Tom."

ANSWER: **St. Paul's** Cathedral

[10] This name is shared by a 1923 stadium known for its "twin towers" and a 2007 stadium which will host the soccer finals in the 2012 Olympics.

ANSWER: **Wembley** Stadium

[10] Instead of building the Millennium Tower at the site of the Baltic Exchange at 30 St. Mary Axe, Norman Foster designed this building, which has been called "the towering innuendo" and is named for its resemblance to a vegetable.

ANSWER: **Gherkin**

015-11-30-03219

20. On Earth, the gravitational type of this is equal to mass time 9.8 meters per second squared times height. For 10 points each:

[10] Name this type of energy that is dependent on configuration or position.

ANSWER: **potential** energy

[10] This theorem states that for a stable, self-gravitating aggregation of objects, the gravitational potential energy is twice kinetic energy.

ANSWER: **virial** theorem

[10] Traditionally, in a force field, this is the location where potential energy is defined as zero.

ANSWER: **infinity** [accept any answer indicating a non finite distance away]

001-11-30-03220

21. This author riffed on the Antony and Cleopatra story in his *All for Love*. For 10 points each:

[10] Name this Restoration poet and playwright of the allegorical *Absalom and Achitophel*.

ANSWER: John **Dryden**

[10] Dryden savaged fellow poet Thomas Shadwell in this poem, which begins "All humane things are subject to decay."

ANSWER: "**Mac Flecknoe**"

[10] Dryden wrote his allegory *The Hind and the Panther* after converting from this sect to Catholicism. A major shift in T. S. Eliot's poetry occurred after he converted to this sect.

ANSWER: **Anglicanism** [or **Church of England**]

015-11-30-03221