

Editors: Eric Mukherjee, Rob Carson, Chris Chiego, Patrick Liao, Saajid Moyeen, Ike Jose, Eddie Kim
 Writers: JinAh Kim, Jaimie Carlson, Sarita Jamil, Max Smiley, Ben Cushing, Carol Wang, David Ferguson

Tossups

1. In a novel by this author, a drug-addicted man hallucinates about Napoleon and Nero and writes a whole report without realizing his pen is out of ink. In another of his novels, a poet is replaced by a radio for entertainment in a cafe run by Mr. Kirsha and frequented by Abbas. Another of his novels ends with the story of Arafat, who may represent modern science; it begins with Idris tempting Adham to look at his father's estate documents. This author of *Adrift on the* (*) Nile wrote about a man who outrages his father by writing about Darwin and becoming a teacher; his family, including the activist Fahmy, the libertine Yasin, and the quiet Amina, finds out about the conservative Abd al-Jawad's debauchery. This author of *Miramar* and *Midaq Alley* wrote about Kamal's family in a series including *Palace Walk* and *Sugar Street*. For 10 points, name this author of *The Children of Gebelawi* (GEBB-ul-OW-ee) and *The Cairo Trilogy*.

ANSWER: Naguib Mahfouz

2. After this man sent a bunch of gifts to Kenneth Kaunda (CON-duh), Kaunda returned the favor by sending his personal magician. Conservative MP Jeffrey Archer set up the Simple Truth charity in response to uprisings against this man's rule. After those uprisings, this man's government forcibly relocated the Marsh Arabs after turning their home into a desert. Ambassador April Glaspie met with this man in the lead-up to one military action. As part of this man's (*) Al-Anfal campaign, this man ordered an attack on the city of Halabja (huh-LAWB-juh) using hydrogen cyanide and nerve agents. The effects of sanctions against this man's regime were partly alleviated by the corrupt United Nations Oil-For-Food Program; those sanctions began after this ruler invaded neighboring Kuwait and was driven back. For 10 points, name this dictator overthrown during the 2003 invasion of Iraq.

ANSWER: Saddam Hussein [prompt on "Saddam"]

3. Benedetto Croce (CROW-chay) claimed that the philosophy of language and this branch of philosophy are the same thing, since this branch of philosophy is the "science of expression." The third volume of *The World as Will and Representation* discusses this topic and claims that the object of studies in this discipline are used to communicate Platonic ideas. Humans are compared to a clock in a book on this discipline that introduces tick-tock theory; that book considers this discipline's central phenomena (*) "as experience." Ancient treatises on this topic often discuss *mimesis* or *catharsis*, the latter of which is defined as the purging of emotions when one interacts with the objects studied in this discipline. Aristotle's *Poetics* is a major treatise in, for 10 points each, name what philosophical study of beauty?

ANSWER: aesthetics [prompt on things like "art"]

4. Dutch engineer Menno van Coehoorn won the second siege of Namur in this war. After one battle in this war, Teignmouth, Devon was burned and the Earl of Torrington was court-martialed. The result of that battle was overturned by naval actions at Barfleur and La Hogue lost by the Comte de Tourville (tur-VEE), who had earlier won naval superiority in the Channel in the Battle of (*) Beachy Head. Troops from the victorious army at the Second Battle of Mohacs were diverted by Leopold I at the start of this war to defend the Electoral Palatinate. The aggressor in this war lost an ally after the Glorious Revolution and the Battle of the Boyne (boin). Peace negotiations between the Earl of Portland and the Duke of Boufflers ended this war with the Treaty of Ryswick (RISE-wick). For 10 points, name this war in which Louis XIV's expansionist policies were opposed by a namesake European coalition.

ANSWER: War of the Grand Alliance [or War of the League of Augsburg; or Nine Years' War; or War of the Palatine Succession before "Palatinate" is read; prompt on "King William's War" before mention]

5. One of these works tells of a group of vine-dressers who kills the owner's son so that they can keep a greater share of the profits from the harvest. In another of these works, a group of laborers are disgruntled at their employer because he pays all his employees the same wage regardless of how long they have been working. A better known one depicts an architect who built his house on (*) stone, and another who built his house on sand. In another of these, a son demands money from his father and spends it all on prostitutes and gambling before returning home in shame, yet is welcomed back with open arms. For 10 points, name these stories, one of which depicts a Jew who was beaten nearly to death and was ignored by a priest and rabbi before receiving help from a Samaritan.

ANSWER: parables of Jesus [prompt on "the Bible"]

6. A D major piece in this genre by this composer imitates gypsy music in a minuet marked Allegretto alla zingarese (AH-luh-GRET-toh ah-lah ZEENG-guh-RAY-zay). Four-voice fugues end the second, fifth, and sixth of these pieces

included in their composer's Op. 20. One of these pieces in D major has a slow second movement marked *Largo cantabile e mesto* (LAHR-goh kahn-TAH-bee-lay ee MESS-toh); another, in D minor, is nicknamed for its opening chain of falling fifths. One of these pieces ends with multiple statements of the main theme being interrupted by repeated rests, and is nicknamed (*) *The Joke*. The second movement of a piece of this type is a theme-and-variations on the melody of "Deutschland über alles." These pieces include *Largo* and *Emperor*, and were published six to an opus in collections such as *Sun*, *Russian*, and *Erdödy*. For 10 points, name these chamber pieces for four instruments, written by their 18th-century "father."

ANSWER: string quartets by Joseph Haydn [or obvious equivalents; prompt on partial answer]

7. The gene mutated in this syndrome is overexpressed in an associated ataxia/tremor syndrome. Experimental drugs to treat this condition like basim-glurant and mavo-glurant target the mGluR5 (EM-glue-ARE five) receptor. Neurons of sufferers of this disease have abnormally long and thin dendritic spines. Sufferers of this disease have characteristic protruding ears, elongated face, and (*) macro-orchidism. This disease is the most common inherited form of mental retardation and is caused by the expansion of C-G-G repeats in the F-M-R-1 gene, which causes a staining discontinuity in the q-twenty-seven-point-three region of a certain structure. For 10 points, name this genetic disease in which one of the sex chromosomes appears easily breakable on karyotype.

ANSWER: Fragile X syndrome [or Martin-Bell syndrome or Escalante syndrome]

8. Backus and Smith name the observation that the correlation between these values and consumption are non-positive. Volatility in these values arises due to the interaction between changes in monetary policy and sticky prices according to Dornbusch's overshooting hypothesis. Nominal interest rates are related to these quantities according to Fisher's open market hypothesis. Deviations from these quantities' "real" value from one accounts for differences in (*) purchasing power parity. Tobin taxes are designed to minimize fluctuations in these quantities; those fluctuations are minimized in schemes that use pegging. For 10 points, name these quantities that were fixed by the Bretton Woods Conference, which compare the values of different currencies to each other.

ANSWER: exchange rates

9. Zong Woo Geem proposed Harmony Search methods as an alternative to these kinds of methods, and showed that they perform 350% better on average than these methods do over a wide variety of problems. David Goldberg, who investigates these methods, articulated the "building-block hypothesis," which supposedly explains why they work. These methods often use either Elitist or Roulette Selection during one phase. The No Free Lunch Theorem can be used to show that there is no way to alleviate the problem of these methods settling on a locally (*) optimum solution. They generally work by incorporating a "fitness function," which is used to improve candidate solutions during the "selection" phase; afterwards, a "mutation" phase is used to alter the solution set. For 10 points, name these algorithms that mimic the principles of natural selection to solve a problem.

ANSWER: genetic algorithms

10. A chapter of this novel quotes a poem about "bare feet and chamomile sap" before observing that "his coming is the reverse route of his going." In this novel, three overlapping shadows that appear to be holding hands are seen as a good omen. The lesson "definitions belonged to the definers" is forcibly imparted to Sixo in this novel, which features a climactic scene in which the protagonist mistakenly attacks another character with an ice pick while thirty other women sing. Janey Wagon works as a servant for Mr. and Mrs. Bodwin in this novel, which relates how the central characters escaped from (*) Sweet Home to Cincinnati. Baby Suggs dies after Halle's sons run away in this novel, which begins with the line "124 was spiteful." Paul D distrusts this novel's title character, who charms Denver and her mother. For 10 points, name this book titled for the murdered daughter of Sethe, a 1987 novel by Toni Morrison.

ANSWER: Beloved

11. Description acceptable. During this event, Émile Ollivier (oh-LIV-ee-ay) said that he accepted responsibility for his ministry's actions "with a light heart." A meeting was unnecessary after one party received a message from Charles Anthony, according to one document during this event written by the theologian Heinrich Abeken. During this event, "aide-de-camp" was rendered as "non-commissioned officer", an (*) insult to Count Benedetti, who had been told by the Duke of Gramont to ask about the candidate chosen by Juan Prim for the Spanish throne. During this event, one document was likened to a "red rag on the Gallic bull", and was widely distributed after consultation with von Roon and von Moltke (MOLT-cuh). For 10 points, name this crisis in which Bismarck edited a telegram to incite anti-German sentiment in France and provoked the outbreak of the Franco-Prussian War.

ANSWER: Ems Dispatch crisis [or the crisis caused by the Ems Telegram; or anything like the outbreak of the Franco-Prussian War before "Franco-Prussian" is read; or Napoleon III's declaration of war on Prussia; prompt on "Leopold of

Hohenzollern's candidacy for the Spanish crown" or anything mentioning the offering of the "Spanish crown" before "Spanish throne" is read]

12. This author wrote "may the jealous Gods prevent our fierce and uncontrolled descent" in a spoof of Ben Jonson called "To a Lady, Persuading her to a Car." He claimed that "all our pomp of yesterday / is one with Nineveh and Tyre" in a poem whose first four stanzas end with the line "Lest we forget -- Lest we forget." He wrote of how "dawn comes up like thunder outer China / 'crost the Bay" in a poem whose speaker imagines a girl "by the old (*) Moulmein pagoda." This author of "Recessional" wrote about the Colonel's son chasing after the horse-thief Kamal but eventually growing to respect him in a poem that begins "East is East and West is West, and never the twain shall meet." In another poem, the narrator states that an abused water-carrier who took a bullet for him is "a better man than I am." For 10 points, name this British author of "Mandalay", "Gunga Din" and "If".

ANSWER: Rudyard Kipling [or Joseph Rudyard Kipling]

13. Marcel Proust was supposedly cured of a bout of giddiness when he saw this painting, and he described the "sunlit" patch of yellow in this painting as the manifestation of "artistic perfection." Carel Fabritius made a painting with a similar title to this one, but it depicts a music instrument's seller's stall. This painting depicts a city that was also shown in its artist's *The Little Street*. In the background of this painting, one can make out the tower of the "Old Church." Many buildings in this painting are in (*) shadow, though not the large New Church. The clock on the Gate Schiedam (SHY-dam) in this painting indicates that the time of day is 7am. The front foreground of this painting is dominated by a quay, where there are numerous ships. A cloudy sky dominates the upper half of this painting, which shows half a dozen peasants on a dirt foreground in the bottom left. For 10 points, name this cityscape by Jan Vermeer.

ANSWER: View of Delft

14. Anyone who looks at the moon during the holiday celebrating this god's birthday will be falsely accused; that holiday is known as Vinayak Chaturthi (veen-EYE-ak cha-TOOR-tee). This figure once blocked Parashurama's (puh-RAH-shu-RAH-mah) path, leading Parashurama to attack him with his axe. This god's forms, which includes several with multiple heads and/or holding a pot of gems, are 32 in number listed in the (*) Mudgala Purana. This god, who transcribed the Mahabharata (mah-HAH-BAH-raht-uh) from Vyasa (vee-AAS-uh), once was challenged by his war-god brother to a race around the world, which he won by simply running around his parents. This brother of Skanda was created by his mother when she breathed life into the tumeric paste she used for bathing; while guarding his mother Parvati, Shiva decapitated him and later gave him his most notable feature. For 10 points, name this Hindu god and "remover of obstacles," who has the head of an elephant.

ANSWER: Ganesha

15. The southern part of this mountain range includes the Chitwan Valley within the Inner Terai, which is home to the Tharu people, who have natural malaria resistance. The cliffs of the Paro Valley in this mountain range feature the sacred Taktsang monastery while the Nangpa Pass between Cho Oyu and another mountain in this range was the site of a 2006 massacre. Lhotse is separated from the highest point of this mountain range by the South (*) Col while the Angsi Glacier in this range gives rise to the Yarlung Tsangpo River, whose deep canyon defines its eastern boundary before turning into the Brahmaputra River. For 10 points, name this Asian mountain range that contains nine of the ten highest peaks in the world, including Mt. Everest.

ANSWER: Himalayas [prompt on "Greater Ranges"]

16. In one opera by this man, Miss Schlesen and Kallenbach sing a duet in which they describe "how the saints attained success"; that work's third act contains the "Newcastle March". One opera by this musician is largely a monologue by a man named "M" on a holographic set, detailing how no one believes that he's met aliens; that collaboration with David Henry Hwang is entitled *1000 Airplanes on the Roof*. A section of another one of his operas contains text by (*) Lucinda Childs read from a bed and is called "Prematurely Air-conditioned Supermarket". That work by this composer is interspersed with Christopher Knowles' "Knee Plays," is divided into the sections "Train", "Trial", and "Field/Spaceship", and has a solo violinist dress as the title figure. For 10 points, name this composer whose "Portrait Trilogy" includes *Akhenaten*, *Satyagraha* (SAT-yuh-GRAH-hah), and *Einstein on the Beach*.

ANSWER: Philip Glass

17. In this story, a woman stretches her neck as far as possible to avoid contact with a man, while her friend just holds his hand. A character in this story decides that "for about forty days one could increasingly whip up a city's interest by... advertising" and provides a crowd with flashlights. Another character in this story is watched by three butchers at a time and is annoyed when those who are supposed to be watching him play cards instead. The title character of this story is pulled out of (*) straw and replaced by a panther at its end. At the end of this story, the title

character reveals that his unusual behavior was caused by his not being able to find a food that tasted good to him. For 10 points, name this short story by Kafka in which the title performer starves himself.

ANSWER: “A Hunger Artist” [or “Ein Hungerkünstler”; accept alternate translations like “A Starvation Artist” (until “starves” is read) or “A Fasting Artist”]

18. By using this substance as a mask, Tour et al. discovered a method for creating graphene nanoribbons called meniscus-mask lithography. This substance has a resistivity of 18.2 million ohm-centimeters. In molecular biology, this substance is often treated with D-E-P-C to inactivate nucleases. The region of stability of this substance is marked out using green lines in a Pourbaix (poor-BAY) diagram. So-called “wires” of this substance are able to traverse cell (*) membranes. The aforementioned resistivity of this substance is displayed on lab-scale Milli Q machines for dispensing the deionized form of this substance. This substance has its maximum density at 4 degrees Celsius, and through extensive hydrogen bonding its boiling point is raised to 100 C. For 10 points, name this universal solvent, with formula H₂O.

ANSWER: water [or H₂O before mention]

19. The majority opinion for this case referenced *Railway Express Agency, Inc. v. New York and Allied Stores of Ohio* while arguing against using the principle of “equal application” to interpret the Fourteenth Amendment. The issue discussed in this case had previously been used to grant an annulment in *Kirby v. Kirby*, and this case is celebrated in a holiday on June 12. The result of this case was only enforced in Alabama after *United States v. Brittain*. Though it’s not *McLaughlin v. Florida*, Justice Potter Stewart stated in a concurring opinion that a law cannot be valid if it depends on the (*) race of the actor. This Supreme Court case overturned *Pace v. Alabama*, and it has been cited as precedent in *Perry v. Schwarzenegger* and *Obergefell v. Hodges* due to its claim that marriage is an unenumerated right. For 10 points, name this 1967 case that ended anti-miscegenation laws in the US.

ANSWER: Loving v. Virginia

20. An early paper about the interactions of these phenomena by Bhabha (BAB-huh) and Heitler put forward the “cascade” mechanism. Fleischer, Price, and Walker developed a method of detecting these phenomena using stacked Lexan poly-carbonate sheets. One facility used to observe these phenomena contains the Fly’s Eye and the Surface Station; that facility is named for Pierre Auger. The AGASA (uh-GAH-sah) experiment helped find evidence of these phenomena that violate the (*) G-Z-K limit, which states that these phenomena with distant sources cannot have energy greater than 5 times 10 to 19 joules. Of the 99% of these particles that are nuclei, only 1% of them are H-Z-E ions, while over 90% are protons. For 10 points, name these particles that comprise matter-based radiation impacting Earth.

ANSWER: Cosmic rays

Bonuses

1. Answer some questions about a Chinese dynasty for 10 points each:

[10] Name this dynasty which oversaw the rebuilding of Chang’an as a planned city with curfews and systematic wards. Among its leaders were Wen Di and Yang Di.

ANSWER: Sui Dynasty

[10] A “Grand” one of these features was commissioned by Emperor Wen of Sui, and was used to transport agricultural goods from south to north and to link the Yellow and Yangtze Rivers.

ANSWER: canal

[10] This city originally established for its strategic location near the Grand Canal was eventually taken by the Jurchens when the emperor and his entire family were abducted in the Jingkang incident.

ANSWER: Kaifeng [also accept Daliang or Bianliang or Bianzhou or Nanjing or Dongjing or Bianjing]

2. This branch of mathematics is popularly known for its joke that a coffee mug is equivalent to a donut, and it sometimes concerns itself with objects like Klein bottles and Mobius strips. For 10 points each:

[10] Name this branch of mathematics, the study of objects with properties preserved through deformations, twistings, and stretching objects.

ANSWER: topology

[10] Topology often studies these objects, which cannot exist in more than 3 dimensions. Reidemeister (RYE-duh-MY-ster) showed that they can be created by three “moves”, and their equivalence is the subject of the recognition problem.

ANSWER: knots

[10] This is the first-discovered knot invariant. It is equal to the determinant of the matrix created by finding the Burau representation of a knot’s braid word, minus the identity matrix, then deleting the first row and column.

ANSWER: Alexander polynomial

3. This species of virus is surprisingly large for an RNA virus. For 10 points each:

[10] Name this viral genus with host tropism-determining surface spike peplomers which give a namesake appearance, members of which include MERS and SARS.

ANSWER: coronavirus

[10] The genome of the coronavirus has *this* sense, meaning that it can be directly translated into proteins.

ANSWER: positive or plus

[10] This mode of viral reproduction allows viral DNA to integrate and stay latent in the host cell, in contrast to the lytic cycle. Temperate phages typically replicate in this fashion.

ANSWER: lysogenic cycle

4. The invention of a faster potter's wheel in the 11th century BC shifted the style of Greek pottery. For 10 points each:

[10] That invention led almost immediately to this art movement in which pottery was often marked with angular lines and concentric circles.

ANSWER: Proto-Geometric period [do NOT accept "Geometric period"]

[10] The Proto-Geometric style was common in Greece during this period, which saw populations decline following the collapse of Bronze Age palace societies. Like a later period with the same name, it ended with a Renaissance.

ANSWER: Greek Dark Age [accept Homeric Age]

[10] A notable Dark Age one of these ceremonies was performed in the heroon of Lefkandi. A later one of these ceremonies at Kerameikos featured a famous speech by Pericles.

ANSWER: funerals [or burials]

5. This woman's son Albert is briefly captured by the bandit Luigi Vampa at the behest of the protagonist. For 10 points each:

[10] Name this Catalan woman who marries the treacherous Fernand de Morcerf after her impending wedding to the protagonist is disrupted at the beginning of the novel.

ANSWER: Mercédès Herrera [or Mercédès Mondego]

[10] Mercédès appears in this Alexandre Dumas novel, whose protagonist Edmond Dantes adopts the title alias, among many others, as part of a grand plan to exact revenge on all who wronged him.

ANSWER: *The* Count of Monte Cristo

[10] After he is falsely accused of being a Bonapartist, Dantès is imprisoned in this imposing fortress off of the coast of Marseille. While here, he meets the Abbé Faria, who reveals to him the future source of his riches.

ANSWER: Chateau d'If (sha-TOE deef) [or If Castle, I suppose]

6. This author helped popularize many early 20th century Anglophone authors with his journals *The English Review* and *The Transatlantic Review*. For 10 points each:

[10] Name this English author of the *Parade's End* tetralogy, whose novel *The Good Soldier* was called "the finest French novel in the English language".

ANSWER: Ford Madox Ford [or Ford Hermann Hueffer]

[10] Ford's *Parade's End* novels recount the life of this "last Tory," a statistician serving in the British army during World War I. He escapes his intensely unpleasant marriage through an affair with Valentine Wannop.

ANSWER: Christopher Tietjens [accept either underlined portion]

[10] *The English Review*'s first issue included "The Jolly Corner", a short story by this author of *The Golden Bowl* and *Portrait of a Lady*.

ANSWER: Henry James

7. A symbolic stoning of the devil during this event often results in real injuries for participants. For 10 points each:

[10] Name this pillar of Islam that involves making a pilgrimage to Mecca.

ANSWER: Haji

[10] Pilgrims circle the Ka'aba seven times, which has this object as its eastern cornerstone. This object was once white, but turned its current color from being touched by sinful humans.

ANSWER: Black Stone [or al-Hajar al-Aswad]

[10] One part of Hajj requires the pilgrim to run back and forth between these two hills, emulating Hagar's actions in search of water.

ANSWER: al-Safah and al-Marwah [both underlined answers required]

8. In this painting, a yellow book and vase of lilies sit on a table while a telephone rests on the floor. For 10 points each:

[10] Name this painting of two fashion designers facing the viewer. One is a standing woman in a red and black dress, while another is a barefoot man in slacks with a white cat on his lap.

ANSWER: Mr. and Mrs. Clark and Percy

[10] This painter of *Mr. and Mrs. Clark and Percy* and *A Bigger Splash* is known for his “joiner” photo-collages. Along with Charles Falco, he suggested that the Old Masters used camera obscura techniques.

ANSWER: David Hockney

[10] Hockney was a member of this movement, which incorporates visual elements from mass culture. Its name originates from a Richard Hamilton collage, and other practitioners include Andy Warhol and Roy Liechtenstein.

ANSWER: Pop art [or popular art]

9. This philosophical character “hath said in his heart, there is no such thing as Justice.” For 10 points each:

[10] Name this character from Chapter 15 of *Leviathan* who objects to the creation of the social contract. He also “hath said in his heart there is no God,” and his objections are quickly dismissed using a form of game theory.

ANSWER: the Fool

[10] The Fool appears in *Leviathan*, a treatise by this 17th-century English political theorist whose favor of a strong central authority grew out of his experiences during the English Civil War.

ANSWER: Thomas Hobbes

[10] Hobbes first used the famous phrase “war of all against all” in this 1642 Latin work which described the natural human condition and rejected Aristotle’s claim that men are naturally political.

ANSWER: *De* Cive [or *On the* Citizen]

10. Answer the following questions about Zeus’s infancy, for 10 points each:

[10] This Titan and mother of Zeus managed to hide him from his father, Kronos, shortly after his birth.

ANSWER: Rhea

[10] The infant Zeus was hidden on this mountain, on the island of Crete. It shares its name with the Turkish mountain from which Ganymede was kidnapped by Zeus.

ANSWER: Mount Ida

[10] According to some myths, these figures masked the cries of the infant Zeus with their singing and dancing. The children of Thalia and Apollo, they were alternatively the attendants of Rhea or Cybele (SI-bill-ee).

ANSWER: Korybantes or Kouretes

11. These people won the first Battle of Dragoon Springs in 1862 against invading Confederate forces, but were later attacked by the California Column of Union volunteers at a namesake pass. For 10 points each:

[10] Identify these Athabaskan-speaking peoples related to the Navajo who fought many battles around the Dragoon Mountains under leaders like Mangus Coloradas.

ANSWER: Apache

[10] This leader of the Chiricahua Apache evaded capture by the U.S. army until surrendering at Skeleton Canyon in 1886. He later made appearances at the World’s Fair in St. Louis.

ANSWER: Geronimo

[10] Geronimo was captured by this general, nicknamed the “Brave Peacock,” who earned the scorn of his predecessor George Crook by exiling his Apache scouts to Florida along with Geronimo.

ANSWER: Nelson Miles

12. Chris Alexander, Canada’s Citizenship and Immigration Minister, briefly suspended his reelection campaign after this boy’s death. For 10 points each:

[10] Name this boy whose family wished to enter Canada after fleeing as refugees from Syria. This three-year old boy’s body was found washed up on a Turkish beach, prompting international outcry.

ANSWER: Alan Kurdi [or Aylan Kurdi; prompt on “Kurdi”]

[10] Canadians either will vote or have voted, depending on when you’re playing this packet, on whether or not to replace this longtime Conservative Prime Minister, who succeeded Paul Martin in 2006.

ANSWER: Stephen Harper [or clear knowledge equivalents like #HeaveSteve]

[10] Harper’s government has refused to call an inquiry into missing members of these people, who are victimized at higher rates than other demographics. Many of these people disappeared in British Columbia’s Highway of Tears.

ANSWER: murdered and missing indigenous women [accept obvious equivalents such as female aboriginals, First Nations women; or MMIW; prompt on “women” and equivalents; prompt on “indigenous peoples,” “aboriginals,” “First Nations” and equivalents]

13. For 10 points each, answer the following about late 19th and early 20th century American architecture

[10] This architecture firm's Beaux (bow) Arts style can be seen in the design of Columbia University's campus, the National Museum of American History and the 1910 New York Pennsylvania Station.

ANSWER: **McKim, Meade and White**

[10] Stanford White was murdered by millionaire Harry Thaw in this building that he designed in New York City. Another building of the same name was designed by Charles Luckman and is home to the WNBA's Liberty and the NHL's Rangers.

ANSWER: **Madison Square Garden II**

[10] This contemporary of McKim, Meade and White rejected the Beaux-Arts style and designed the United States Supreme Court Building and the landmark Woolworth Building.

ANSWER: Cass **Gilbert**

14. This composer's Piano Concerto No. 1 is scored for a small orchestra of just trumpet and strings. For 10 points each:

[10] Name this composer whose Violin Concerto No. 1 comprises a nocturne, a scherzo, a passacaglia (PASS-uh-KAG-lee-uh), and a burlesque.

ANSWER: Dmitri **Shostakovich** [or Dmitri Dmitriyevich **Shostakovich**]

[10] A Soviet city lends its name to this Shostakovich symphony, whose first movement introduces a repetitive "invasion" theme often interpreted as a depiction of the Nazi army.

ANSWER: **Leningrad** Symphony [or Symphony No. **7**; or obvious equivalents]

[10] This D minor Shostakovich symphony was written in response to a scathing review that denounced his opera *Lady Macbeth of the Mtsensk District* as "muddle instead of music."

ANSWER: Symphony No. **5** [or obvious equivalents]

15. Answer the following involving those most classic laws of physics, Newton's Laws, for 10 points each.

[10] Compared with gravitational mass in the equivalence principle is a mass this concept names, while Newton's First Law states that due to this principle, an object under zero net force will remain in constant velocity.

ANSWER: **inertia**

[10] Newton's Second Law can be used to derive this equation which states Δv equals exhaust velocity times natural log of initial mass over final mass.

ANSWER: **Tsiolkovsky** rocket equation

[10] The rocket equation takes into account this concept that states that laws governing the motion of bodies remain the same in all inertial reference frames. It does not take any universal speed limits into account, however.

ANSWER: **Galilean** invariance [or **Galilean relativity**]

16. Leonardo da Vinci brought the *Mona Lisa* to the court of one monarch from this nation, to whom Salai sold it after his death. For 10 points each:

[10] Name this nation ruled by the large-nosed Francis I, who formed an alliance with Suleiman the Magnificent to fight against the Holy Roman Empire and sent Jacques Cartier to the New World.

ANSWER: **France**

[10] In another effort to disrupt the growing influence of the Holy Roman Empire, Francis I attempted to ally with Henry VIII at this meeting in the Pale of Calais, which ended with a mass on Corpus Christi.

ANSWER: **Field of the Cloth of Gold**

[10] That mass was led by this Cardinal and Lord Chancellor, who also helped raise money to free Francis I after his capture at the Battle of Pavia using the Amicable Grant.

ANSWER: Cardinal Thomas **Wolsey**

17. This process often involves reward and punishment. For 10 points each:

[10] Name this learning process in which consequences encourage or discourage behavior. It is often contrasted with its "classical" form.

ANSWER: **operant conditioning** [or **Skinnerian conditioning** or **instrumental learning**]

[10] Operant conditioning was first extensively studied by this man, who examined the attempts of cats to escape from boxes. He termed it the "law of effect."

ANSWER: Edward L. **Thorndike**

[10] B.F. Skinner created this model, which says a discriminative stimulus sets the occasion for a response and an appropriate reinforcement. The presence of the stimulus sets it apart from theories based on pairwise associations.

ANSWER: **three-term contingency**

18. According to a proverb, the young should not read *Water Margin*, while the old should not read this book. For 10 points each:

[10] Name this member of the Four Great Classical Novels of China, written by Luo Guanzhong (LOO-oh gwan-JONG). It opens with the Han Dynasty in turmoil and spends most of its length chronicling clashes between Shu, Wei, and Wu.

ANSWER: Romance of the Three Kingdoms [or Sanguo Yanyi; or ROT3K; prompt on “Three Kingdoms”; do not accept “Records of the Three Kingdoms” or “Sanguozhi Pinghua”]

[10] If anyone can be said to be the protagonist of *Romance of the Three Kingdoms*, it's this founder of the kingdom of Shu, who swears the Peach Garden Oath with Guan Yu and Zhang Fei.

ANSWER: Liu Bei [or Liu Xuande]

[10] Liu Bei, Cao Cao, and Sun Jian take part in the Yuan Shao-led coalition against this tyrant, who takes power after the Yellow Turban Rebellion. A dispute involving Diao Chan causes his death at the hands of his foster son Lu Bu.

ANSWER: Dong Zhuo

19. After being blinded, a character in this novel sets fire to the mattress of the bed above him. For 10 points each:

[10] Name this novel in which Wolf Larsen takes in Humphrey van Weyden aboard the *Ghost*. In the end of this book, van Weyden is recused.

ANSWER: *The Sea-Wolf*

[10] *The Sea-Wolf* was written by this author of *The Scarlet Plague* and *The Iron Heel*. He is better known for writing about Buck in *Call of the Wild*.

ANSWER: Jack London [or John Griffith London; or John Griffith Chaney]

[10] Wolf Larsen clashes several times with his brother, who has this first name. The speaker of the most famous poem by World War I poet Alan Seeger claims to have a “rendezvous” with a figure of this name.

ANSWER: Death [accept Death Larsen or “I Have a Rendezvous with Death”]

20. For 10 points each, answer some questions about catalytic cycles.

[10] In the presence of this transition metal, organo-boronic acids and halides are joined together to form olefins and bi-phenyls in a reaction named for Suzuki. A common hydrogenation catalyst has this metal supported on carbon.

ANSWER: palladium [accept Pd]

[10] This step in the catalytic cycle of the Suzuki coupling occurs after oxidative addition and before reductive elimination, and involves the exchange of a set of ligands from one center to another.

ANSWER: transmetalation

[10] The organoboron reagent in the Suzuki reaction is first activated by this type of species before it can transmetalate. They donate electrons in the Lewis definition, and accept protons in the Bronsted-Lowry definition.

ANSWER: base