



**ACADEMIC
COMPETITION
FEDERATION**

2023 ACF NATIONALS

Playoffs Round 8

Packet By

The Editors (8)

Editors

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TOSSUPS

1. Very low values of this quantity can be measured using the change in resistance of a Pirani gauge filament or using the current generated by gas discharge in Penning gauges. This quantity is decreased by a “roughing” device before being decreased further by a booster, such as a Roots blower. Continually operating at low values of this quantity can cause oil backstreaming. The critical value of this quantity for a van der Waals (“vahls”) gas equals the expression “ a over $27 b$ squared.” The partial derivative of temperature with respect to this quantity at constant enthalpy is the definition of the Joule–Thomson coefficient. A region where this quantity is very low serves as thermal insulation for dewars (“DOO-ers”). This quantity decreases isothermally in the first step of the Carnot (“car-NO”) cycle. For 10 points, name this quantity that, in a vacuum, is less than “10 to the minus 5” millibars.

ANSWER: **pressure** [prompt on p]

<Physics>

2. The case *Madrigal v. Quilligan* sparked a push in this city to supply foreign-language medical forms after hundreds of women were involuntarily sterilized. The Vernon incinerator was shelved after outcry by a grassroots organization called the “Mothers of” part of this city founded by Aurora Castillo. To protest low graduation rates, thousands of high school students in this city held “blow outs” in 1968. In this city, Fidel Lopez was dragged out of his vehicle and beaten at the intersection of Florence and Normandie. A mayor of this city names a phenomenon in which white voters falsely respond to polls as likely to vote for a non-white candidate. In 1980s gubernatorial races, George Deukmejian (“duke-MAY-jee-an”) twice defeated that mayor of this city, Tom Bradley. A victim of police brutality in this city pleaded “can we all get along?” during 1992 unrest. For 10 points, what city was the site of the Rodney King riots?

ANSWER: **Los Angeles** [or **LA**; accept Mothers of East **Los Angeles** or **MELA**]

<American History>

3. The claim that this system is a “complete outlook on the world” is made in a paragraph on George Eliot from a series of “skirmishes in a war with the age.” This system and alcohol are called “the two great means of corruption” in a passage that says that “nobody remains at liberty to choose” because “either a man is a Chandala (“chun-DAH-lah”) or he is not.” This system is called “the metaphysics of the hangman” in a passage that calls the idea of free will one of the “four great errors.” A book ends by calling this system “the one immortal blemish upon the human race” and then calling for “the transvaluation of all values.” According to an 1895 book, the very word for this system is a misunderstanding because at bottom the only true follower of this religion was the man who founded it. For 10 points, Friedrich Nietzsche often criticized what religion’s “slave morality”?

ANSWER: **Christianity** [or the **Christian** religion; accept **Christian** morality; reject “religion” or “monotheism”; reject “slave morality”]

<Philosophy>

4. When a rival threatened to turn this ruler’s father into soup, this ruler replied “don’t forget to give me a bowl of broth.” After crushing rebels, this ruler wrote a three-stanza poem that asks “will fierce warriors guard the four corners?” after starting “the mighty wind blows, scattering the clouds.” According to legend, an old woman turned to blue smoke in front of this ruler after he beheaded a white snake, foreshadowing his reign. One of this ruler’s generals, who was originally a butcher skilled in preparing dog meat, was Fán Kuài. After this ruler lost the Battle of Báidēng (“bye-dung”), he began a marriage alliance system called *héqīn* (“huh-cheen”). A rival of this ruler tried to assassinate him during a sword dance at the Feast of Hóng Gate. This rival of Xiàng Yǔ (“shyahng eww”) rose from supervising the transport of prisoners in Pèi (“pay”) County to winning a “Contention” against the state of Chǔ. For 10 points, name this peasant who founded the Hàn Dynasty.

ANSWER: **Liú Bāng** [or Emperor **Gāozǔ** of Hàn; or Hàn **Gāozǔ** or Han **Kao**-tzu; or **Gāodì** or **Gāo** Huángdì; or **Liu Pang**; prompt on **Liú**]

<Other History>

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Note to moderator: Read the answerline carefully.

5. The development of this symphony's finale begins with an E-flat major quotation of the "Ode to Joy." In the second theme of that movement of this symphony, the upper strings often use ricochet to play an *ostinato* that consists of a quarter note followed by three eighth triplets, which reputedly caused the violinists at its London premiere to collapse in laughter. This symphony's A-minor slow movement begins with seven measures of staccato eighth notes in the strings, followed by an extended oboe solo. A chorale for cellos and violas follows the introductory theme of this symphony, which is first stated with two horns in unison. Robert Schumann praised the "heavenly length" of this symphony, which may have inspired its common nickname differentiating it from the composer's sixth symphony in the same key. For 10 points, name this lengthy symphony that follows the *Unfinished*, the last by an Austrian composer.

ANSWER: Franz **Schubert**'s Symphony No. **9** in C major [or **Schubert**'s **Ninth** Symphony; or **Schubert**'s **Great** Symphony or **Schubert**'s **Great C major** Symphony; accept **D. 944**; accept Franz Peter **Schubert** in place of "Franz Schubert"; prompt on **Schubert**'s **Seventh** Symphony or **Schubert**'s **Eighth** Symphony or equivalents by asking "what is its nickname or key?"; reject "Great" symphonies in other keys, such as "Great G minor"]
<Classical Music>

6. In a novel titled for this body part, schoolboys theorize that the king depicted on pennies is actually just the "shadow king," while the real king spends all his time alone in a big room. At the end of a novel titled for this body part, Trumper returns to a seaside town that has been bought by the founder of the Penny Bank and Friendly Society, the former schoolteacher Mr. Slime. In a book titled for this body part, the author imagines replying "fuck you, Madame" to a woman whose child points at him and yells "Look!" on a train. This body part titles an autobiographical novel by the Barbadian author George Lamming, as well as a book that analyzes the subconscious anti-Blackness of the author's compatriot Mayotte Capécia's novel *I Am a Martinican Woman*. For 10 points, name this body part that partly titles a psychoanalytic study of racism by Frantz Fanon.

ANSWER: **skin** [accept *Black **Skin***, *White Masks*; accept *In the Castle of My **Skin***]
<World Literature>

7. This figure appears with a broken arm and genitals and leans to the right against his adversary in a limestone relief sculpture discovered at Dura-Europos. It's not Apollo, but a headless, armless terracotta sculpture of this figure placing one leg on a bound animal was found at Veii ("VAY-ee"). A goddess rests a cushion on this figure's head in one of the friezes on the east metope of the Temple of Zeus. The centerpiece of the Getty's ancient art collection is a youthful nude depiction of this figure discovered at Hadrian's Villa and named for the Marquess of Lansdowne. A bearded sculpture of this figure depicts him with his right hand behind his back grasping three apples and is a reproduction of an original by Lysippos. That muscular sculpture of this hero leaning on a skin-draped club is named for the Farnese family. For 10 points, name this hero often depicted in Greek art strangling the Nemean lion.

ANSWER: **Heracles** [or **Hercules**; accept *Farnese **Hercules*** or ***Ercole** Farnese*; accept *Lansdowne **Hercules***]
<Painting & Sculpture>

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8. In a legend from this modern-day country, a widowed fisherwoman smashes a jar to free a princess trapped in a golden snail shell. A food goddess from this country was born from an egg derived from the tear of Antaboga. A pangram from this country used to order the consonants of a language derives from a disagreement over a royal heirloom that led to the deaths of two servants of the hero Aji Saka (“AH-shee soh-kah”). In a creation myth from this country, a serpent wraps its body around a mountain on the back of a turtle to pin down a previously free-floating island. Enchantments from the evil witch Rangda cause men to stab themselves with daggers in this country’s Barong lion dance. The powerful deity Semar incarnates as an ugly clown servant who is portrayed by a shadow puppet in this country’s traditional *wayang* plays. For 10 points, animist and Hindu beliefs are fused in the mythology of what country’s island of Bali?

ANSWER: **Indonesia** [or Republic of **Indonesia**; or Republik **Indonesia**] (The second sentence refers to the rice goddess Dewi Sri.)

<Mythology>

9. Donald Truhlar deliberately misunderstood the “aug-” (“A-U-G”) label for these mathematical expressions to build a calendar of them prefixed “jun-” (“june”) and “jul-” (“juul”). The popular def2 set of these expressions are collectively named for the city of Karlsruhe (“KARLS-roo-uh”). When the primitives in contracted examples of these expressions overlap, an eigenvalue problem is solved using the Roothaan (“ROH-tawn”)–Hall algorithm. These formulas are most accurate when the radial terms are written as “r times e to the negative zeta r,” but they are much easier to work with if the exponential is “negative zeta r squared.” Modern examples of these expressions like 6-31G* (“six dash thirty-one G star”) include polarization functions to account for electronic correlation. Coefficients in these expressions are computed through variational methods like Hartree–Fock. For 10 points, name these combinations of atomic or Slater-type orbitals that span the space of molecular wavefunctions.

ANSWER: **basis** sets [or **bases**; or **basis** functions; or molecular **basis**; prompt on wavefunctions; prompt on molecular orbitals or MOs; prompt on atomic orbitals or AOs until “orbitals” is read; prompt on Gaussian-type orbitals, Slater-type orbitals, GTOs, or STOs until “Slater-type” is read; prompt on Slater determinants; prompt on linear combinations of atomic orbitals or LCAOs; reject “functionals”]

<Chemistry>

10. Jan (“yawn”) Kott’s comparison of this play to Beckett’s *Endgame* inspired a production of this play in which the house-lights come up while servants ignore a character with a rag over his head who is trying to leave the stage. The Prince of Paphlagonia in Sir Philip Sidney’s *Arcadia* inspired a character in this play who was played by Alan Webb in Peter Brook’s 1962 production and whose wounds are treated with a mixture of flax and egg whites. A man in this play is asked “where is thy lustre now?” by a character who says “out, vile jelly!” while that man’s “corky arms” are bound. Hoping to jump off a cliff to his death, a man in this play is led to Dover by his son, whose voice he fails to recognize. For 10 points, the blinding of Gloucester (“gloster”) takes place in what Shakespeare play whose title character exiles his daughter Cordelia?

ANSWER: *King Lear*

<British Literature>

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11. An artist who worked in this genre claimed he will keep all his “costumes on the shelf” in a song about a boycott of an event in which he engaged in verbal “picong duels.” Early chantwells like Julian Whiterose spearheaded this genre’s switch from French to English. This genre, which was contemporaneous with mento, was combined with Indian rhythms to create soca music. The Andrews Sisters were sued for their hit cover of a song in this genre about US soldiers’ abuse of local women, titled “Rum and Coca-Cola.” Artists who won competitions to become this genre’s “king” include Mighty Sparrow and Lord Kitchener. A 1956 album titled for this genre, the first LP to sell over a million copies, contained the songs “Man Smart (Woman Smarter)” and “Day-O (The Banana Boat Song).” For 10 points, Harry Belafonte is associated with what genre often played during Carnival in Trinidad?

ANSWER: **calypso** (The title of “Calypso King” is now “Calypso Monarch” due to the success of Calypso Rose, who won it in 1978.)

<Other Fine Arts>

12. A treatise on this system compares a childless person to “a lamp in sketches,” in contrast to a parent with “many faces and multi-dimensional knowledge,” to illustrate the importance of generativity. This system divides the day into six blocks of four hours according to the qualities of heaviness or fluidity ascribed to them. Modern experts in this system must pass the BAMS (“bams”) examination. The components of this system are visualized with a colorful five-pointed star containing a three-sectioned pentagon. Knowledge about this system is codified in the *Charaka Saṃhitā* (“cha-ra-KAH sum-hee-tah”) and the *Sushruta Saṃhitā* (“shoosh-roo-tah sum-hee-tah”). One of the goals of this system is to balance *vāta*, *pitta*, and *kapha*, known as the elemental *doshas*. Practitioners of this system may prescribe *churna* powder or *gomutra*, a mixture of cow urine. For 10 points, what system originating in South Asia uses yoga, meditation, and herbal cures to address ailments?

ANSWER: **Ayurveda** [or **Ayurvedic** medicine; prompt on Vedic medicine or (Indian) traditional medicine; prompt on alternative medicine or folk medicine; prompt on healing or similar answers; prompt on herbalism until “herbal” is read; prompt on yoga until read]

<Religion>

13. A placental example of these enzymes is a diagnostic marker of seminomas (“seh-min-OH-mahs”). NEB’s “Antarctic” form of one of these enzymes conveniently inactivates at 80 degrees Celsius. Staining for a tartrate-resistant form of one of these enzymes is diagnostic of hairy cell leukemia. Excessive bone formation and elevation of another one of these enzymes in the blood are diagnostic of Paget’s (“padget’s”) disease. CSPD and PNPP are common substrates for one of these enzymes in ELISA (“eliza”). One of these enzymes extracted from calf intestines prevents recircularization of plasmids after restriction digestion. When the level of one of these enzymes is elevated, high gamma-glutamyl transferase levels confirm a biliary source. Insulin activates protein kinase B and one of these enzymes called PP1 to induce glycogen synthesis. For 10 points, name these enzymes that reverse the action of kinases by removing phosphate groups.

ANSWER: **phosphatases** (“FOSS-fah-TACEs”) [accept protein **phosphatases**, alkaline **phosphatases**, acid **phosphatases**, calf-intestinal alkaline **phosphatase**, Antarctic **Phosphatase**, or placental alkaline **phosphatase**; reject “dephosphorylases”]

<Biology>

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14. A guild of wax merchants that functioned as this historical state's commercial court was called the "Saint John's Hundred." This state was likely partly governed by a group of magistrates and nobles that assembled in the "Chamber of Facets." In this state, a drawing of a four-legged animal with the caption "I am a wild beast" was produced by a six-year-old boy, whose doodles are among this state's thousand-plus excavated birch-bark documents. This state, which was home to the young artist Onfim, contained a *kontor* of the Hanseatic League called the Peterhof. Inhabitants of this state chose mayors called *posadniki* in a popular assembly that any citizen could theoretically convene by ringing a bell. This state's *veche* ("v'YETCH-yeh") was dissolved in 1478, when Ivan III brought its lands under Muscovy's rule. For 10 points, name this medieval merchant republic in northern Rus' ("ROOSE") that was centered on a city called "Veliky."

ANSWER: **Novgorod** Republic [or **Novgorodskaya** respublika; accept Veliky **Novgorod** or Great **Novgorod**]
<European History>

15. An author who lived for decades in this city with Solita Solano used a mononymous pseudonym to write the long-running "Letter from..." column. The "diurnal and nocturnal Distempers" of a social circle in this city was the subject of a mock Restoration satire illustrated with the author's Elizabethan-inspired woodcuts. Janet Flanner spent 50 years as this city's *New Yorker* correspondent. In this city, an unlicensed Irish gynecologist rambles about the Great Enigma after being found dressed in women's clothing. That novel set in this city fictionalized the author and her ex-partner Thelma Wood as Nora Flood and Robin Vote. Most of Djuna ("JOO-nuh") Barnes's novel *Nightwood* is set in this city, where Sylvia Beach founded a bookstore that published the first edition of *Ulysses*. For 10 points, Shakespeare and Company is in what European city, where Lost Generation writers like Gertrude Stein lived in the 1920s?

ANSWER: **Paris** [accept "Letter from **Paris**"] (The second sentence refers to *Ladies Almanack* by Djuna Barnes.)
<American Literature>

16. In a method of quadranting these phenomena, divergence occurs at the right entrance and left exit. These phenomena are most easily identified on 300 and 200 millibar charts. Wasaburo Ooishi's ("OH-ee-shee's") discovery of these phenomena was largely ignored because he published his paper in Esperanto. When these phenomena assume an omega-like shape or a shape named for Daniel F. Rex, blocking can cause long-term stagnation. Jennifer Francis and colleagues have predicted that one of these phenomena will slow down and become more wavy as the Arctic warms. Meanders in these phenomena correspond to Rossby waves. They form in the subtropics where the Hadley and Ferrel cells meet and near the poles where the Ferrel and polar cells meet. The area between a ridge and downward trough in these phenomena is associated with fair weather. For 10 points, name these currents of strong wind.

ANSWER: **jet** streams [or **jets**; accept polar **jets** or subtropical **jets** or **jet** streaks; prompt on air **streams**; prompt on **winds** until "strong wind" is read; prompt on air **currents** until "currents" is read; prompt on atmospheric **rivers** by asking "atmospheric rivers are typically located within and move with what other phenomena?"; reject "Gulf Stream"]

<Other Science>

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17. Historian Julia Young has studied the “diaspora” created by this conflict, including some who founded a National Synarchist Union. As revenge for the death of his brother, a fighter in this conflict burned wounded civilians alive in a passenger train he had derailed to seize a supposed shipment of money. To agree to participate in this conflict, Enrique Gorostieta uniquely requested a life insurance policy. To end this conflict, the *arreglos* (“ah-RAY-glose”) were brokered by an American nicknamed the “ham and eggs” diplomat. Rebels in this conflict were assisted by secret “feminine brigades” named for Joan of Arc. American Ambassador Dwight Morrow intervened in this conflict, which Pope Pius XI denounced in a set of encyclicals criticizing the PRI (“pree”). For 10 points, name this 1920s conflict that pitted Catholic partisans against the Plutarco Calles (“KAI-yase”) administration in Mexico.

ANSWER: **Cristero** War [or Guerra **Cristera**; or **Cristero** Revolt or La **Cristiada**; accept *Mexican Exodus: Emigrants, Exiles, and Refugees of the **Cristero** War*] (Father José Reyes Vega was responsible for the burning train incident.)

<World History>

18. In February 2023, David Lametti delayed to 2024 expansions on this practice that would expand on its legalization in the 2015 Carter decision. A John Zaritsky documentary about this practice profiles Ludwig Minelli, who has since been prosecuted for profiting from it. The federal nullification of this practice in Northern Australia in 1997 motivated the creation of Exit International, which in 2018 flew the botanist David Goddard for a form of its “tourism.” Philip Nitschke has been nicknamed the “Elon Musk” of this practice for his development of the exit bag and Sarco Pod. In Canada, this practice is administered by the program MAiD (“maid”). In 2022, Jean-Luc Godard (“zhahn-luke goh-DARR”) engaged in this practice in Switzerland, where it is legal to provide equipment for it. For 10 points, name this practice for the terminally ill that is advocated for by the right to die.

ANSWER: **assisted suicide** [or physician-**assisted suicide**; or **PAS**; or physician **assisted-death**; or **PAD**; accept **euthanasia**; accept **dying with dignity**; accept medical **assistance** in **dying**; prompt on **suicide** or **suicide** tourism or equivalents like **killing oneself**; prompt on **dying** or word forms] (The documentary is *The Suicide Tourist*.)

<Current Events>

19. The internal structure of these organizations is the subject of May’s law of curvilinear disparity. Richard Katz and Peter Mair argued that some of these organizations function as cartels. Applying the same formula that is used in other fields to compute the Simpson index and the Herfindahl–Hirschman index to these organizations, Laakso (“LOCK-soh”) and Taagepera (“TAH-gay-pay-rah”) quantified their effective number. The expressive, instrumental, and representative functions of these organizations were distinguished by Lipset and Rokkan, who argued that cleavage structures are responsible for their formation. According to Duverger’s (“doo-vair-ZHAY’s”) law, systems such as first-past-the-post tend to have exactly two of these organizations with a significant amount of power. For 10 points, the United States is an example of a system dominated by exactly two of what political organizations?

ANSWER: political **parties** [or political **party**]

<Social Science>

20. A narrator created by this author eats cornflakes with sour milk and is forced to consume apples until he vomits. This author wrote about a man who cuts his face with glass after being rejected by his future wife Linda, a writer who suffers from bipolar disorder. In extended passages by this author, the protagonist attends a toddler’s birthday party and cleans his grandmother’s filthy house. This author’s recent output includes the philosophical novel *The Morning Star* and four essay collections titled for the seasons. This author concluded his most famous work with a novel in which he is threatened for publicly revealing family secrets. The demise of the protagonist’s alcoholic father is described in his novel *A Death in the Family*, the first of six volumes in a highly-detailed autobiographical series. For 10 points, name this Norwegian author who referenced Hitler in the title of his series *My Struggle*.

ANSWER: Karl Ove **Knausgård**

<European Literature>

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BONUSES

1. A. R. Ammons analogized poetry to this activity in a 1967 essay that calls it an "externalization of an interior seeking" that "turns... and eventually returns." For 10 points each:

[10h] Name this activity that releases the speaker "from forms, / from the perpendiculars" in the poem "Corsons Inlet." It ends by noting, as "Scope eludes [his] grasp," tomorrow this activity will be made anew.

ANSWER: **walking** [or equivalents like **perambulation**; accept "A Poem is a **Walk**"; prompt on **movement** or **locomotion** or equivalents]

[10m] To argue that "A Poem is a Walk," A. R. Ammons quotes from a poem by this author, whose speaker walks into a frozen swamp and reflects on the "slow smokeless burning of decay" of a pile of wood.

ANSWER: Robert **Frost** [or Robert Lee **Frost**] (The poem is "The Wood-Pile.")

[10e] Harold Bloom called Ammons "the most direct" poet since Frost to emulate this 19th-century movement, which included the authors of the essays "Walking" and "Nature."

ANSWER: **transcendentalism** [or word forms like **transcendental**] (Henry David Thoreau wrote "Walking" and Ralph Waldo Emerson wrote "Nature.")

<American Literature>

2. Lawrence Kramer and Susan McClary incorporated diverse perspectives and critical theory to form the "new" form of this academic discipline. For 10 points each:

[10e] In contrast to music theory, what field synthesizes large-scale perspectives on the history, interpretation, and perception of music?

ANSWER: **musicology** [accept new **musicology**]

[10m] This "new musicologist," who died in 2022, attacked purely musical analyses of *The Rite of Spring* as sterile in his chapter "Stravinsky and the Subhuman." This UC Berkeley professor wrote a six-volume *Oxford History of Western Music*.

ANSWER: Richard **Taruskin** [or Richard Filler **Taruskin**]

[10h] Taruskin examined the parallels between the primitivism of *The Rite of Spring* and the "life as liturgy" of this later Stravinsky ballet, which is unusually scored for four pianos, percussion, and choir.

ANSWER: **Les Noces** ("lay nuss") [or *The **Wedding***; or ***Svadebka***]

<Classical Music>

3. Answer the following about the Fauvism-influenced, Harlem-based artist Beauford Delaney, for 10 points each.

[10e] In a painting set at the Old Synagogue, Delaney depicted performers of this musical genre, which inspired a book of collages by Henri Matisse ("on-REE mah-TEESE"). Reid Miles created album artwork for music in this genre for the Blue Note record label.

ANSWER: **jazz** [accept **Jazz** *Concert in the Old Synagogue, Lower East Side, New York*; prompt on **music**]

[10m] Delaney was in Group 306 with this other artist, who painted musicians at the Apollo Theater below his studio. This member of The Spiral created collages like *The Dove* and *The Calabash*.

ANSWER: Romare **Bearden** ("ROH-muh-ree BEER-den")

[10h] Delaney used this color for the background of many of his paintings, like his portraits of Marian Anderson and James Baldwin. William H. Johnson used this color in the background of his *Man in a Vest*.

ANSWER: **yellow** [accept **gold**]

<Painting & Sculpture>

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4. In the short story “The Man Who Ended History,” Lillian time travels to learn her aunt’s fate during this historical event. For 10 points each:

[10h] Identify this historical event, the setting of a novella about a group of drama students who plan to assassinate a leader in this event, only for one of them to fall in love with him and warn him of the plan while buying a diamond ring.

ANSWER: Second **Sino-Japanese War** [accept **Japanese occupation of China** or equivalents like the **Japanese invasion of China**; accept the **Wang Jingwei** regime or anything indicating a **Japananese puppet state in China**; prompt on **World War II** in China or the **Second World War** or **WW2**]

[10e] Weili escapes the rape of Nanking in *The Kitchen God’s Wife*, a novel by this author who wrote about four Chinese immigrant families in *The Joy Luck Club*.

ANSWER: Amy **Tan** [or Amy Ruth **Tan**]

[10m] An author with this surname set *Lust*, *Caution* and *Love in a Fallen City* during Japan’s occupation of China. Ken Liu dedicated “The Man Who Ended History” to a journalist with this surname who wrote *The Rape of Nanking*.

ANSWER: **Chang** [or **Zhāng**; accept Iris **Chang** or Iris Shun-Ru **Chang**; accept Eileen **Chang** or **Zhāng** Àiling or **Chang** Ai-ling]

<World Literature>

5. During a St. Louis convention, muckraker Henry Demarest Lloyd lamented the impending destruction of the “Omaha Platform” if it wholeheartedly endorsed this position. For 10 points each:

[10m] Name this position that provided a nickname to Missouri Representative Richard P. Bland, who names the “Grand Bland Plan” to codify this position into law.

ANSWER: **free silver** [accept **bimetallism**; prompt on “Silver Dick”]

[10e] Lloyd published the 1894 book *Wealth Against Commonwealth* as an exposé against this company. Ida Tarbell wrote a “History of” this company run by John D. Rockefeller.

ANSWER: **Standard Oil** [accept *The History of the Standard Oil Company*; prompt on **Standard**]

[10h] Near the end of his life, Lloyd studied democracy in this country for the posthumously-released book *A Sovereign People*. James W. Marshall built a sawmill on territory called a “New” version of this country.

ANSWER: **Switzerland** [or **Helvetica**; or **Swiss** Confederation, der **Schweiz**, **Schweizerische** Eidgenossenschaft, Confédération **suisse**, Confederazione **Svizzera**, Confederaziun **svizra**, or Confoederatio **Helvetica**; accept New **Helvetia** or Nueva **Helvetia** or New **Switzerland**] (Marshall was employed by Swiss immigrant John Sutter to build the mill, where he discovered gold in 1848.)

<American History>

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6. Max Tegmark and this experiment's creator, John Wheeler, explained it by turning a Mach-Zehnder interferometer into a baseball diamond. For 10 points each:

[10m] Name this experiment that inserts or removes a beam splitter after a photon passes through the first beam splitter to see when the photon "decides" to be a particle or a wave.

ANSWER: Wheeler's **delayed choice** experiment [reject "delayed choice quantum eraser" or "quantum eraser"] (The illustration is only found in the full version of their "100 Years of the Quantum" article, found here: <https://arxiv.org/pdf/quant-ph/0101077v1.pdf>, not the abbreviated version published in the Feb. 2001 issue of Scientific American.)

[10e] The delayed choice experiment can be done as a variant of this experiment in which light passing through two holes creates an interference pattern.

ANSWER: **double-slit** experiment [accept **Young**'s experiment or **Young**'s double-slit experiment; accept Thomas **Young** in place of "Young"]

[10h] This interpretation, which was put forth by a communist physicist, explains delayed choice experiments without forcing the past's existence to depend on present observations. This now-spurned interpretation uses an additional guiding equation alongside the Schrödinger equation.

ANSWER: **Bohm** interpretation [or **Bohmian** mechanics, de Broglie-**Bohm** theory, **pilot-wave** model, or **causal** interpretation; accept David **Bohm** or David Joseph **Bohm** in place of "Bohm"]

<Physics>

7. This film was considered lost for over 40 years until its director, Teinosuke Kinugasa ("tay-NO-skeh kee-noo-ga-sa"), discovered the reels in his garden shed. For 10 points each:

[10h] Name this experimental silent film co-written by Yasunari Kawabata. This film centers on a janitor who works at a mental asylum to be closer to his wife.

ANSWER: *A Page of Madness* [or *Kurutta Ichipeiji*; or *Kurutta Ippeiji*]

[10m] This man directed more than 50 films in the silent era, only a few of which still survive. He is more famous for his output in the 1950s, which includes *Sansho the Bailiff* and *Ugetsu*.

ANSWER: Kenji **Mizoguchi** [or **Mizoguchi** Kenji]

[10e] The unauthorized film *The King Kong That Appeared in Edo*, which is now lost, is considered a precursor to *Godzilla* and other movies in this genre of Japanese movies about large monsters.

ANSWER: *kaijū* [prompt on *tokusatsu*]

<Other Fine Arts>

8. This philosopher wrote that Bartleby's formula "I would prefer not to" creates a "zone of indiscernibility" where "all reference is abolished." For 10 points each:

[10m] Name this neo-Spinozist author of *Difference and Repetition* and *The Logic of Sense*.

ANSWER: Gilles **Deleuze** ("zheel duh-LOOZ") [or Gilles Louis René **Deleuze**]

[10e] This philosopher wrote about the indeterminacy of the formula "I would prefer not to" in *The Gift of Death*. He also wrote *Of Grammatology*.

ANSWER: Jacques **Derrida** ("zhahk day-ree-DAH") [or Jackie Élie **Derrida**]

[10h] This 2006 book ends by imagining Bartleby smiling like Norman Bates when he delivers the formula "I would prefer not to." It borrows from Kojin Karatani ("koh-jeen kah-rah-tah-nee") to theorize a "gap," which it uses to rework the Hegelian dialectic.

ANSWER: *The Parallax View* (by Slavoj Žižek)

<Philosophy>

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9. The uniquely realistic statues of the third pharaoh of this name depict him as an angry old man with oversized ears. For 10 points each:

[10h] Give this name of three Twelfth Dynasty pharaohs. Herodotus gave this name's Greek equivalent to a pharaoh who supposedly erected genitalia-topped columns to mock the cities he conquered in Asia Minor and Thrace.

ANSWER: **Senusret** [or **Sesostris**; or **Senwosret**; accept **Senusret I** or **Senusret II** or **Senusret III**]

[10m] To support his Sesostris story, Herodotus cited an inscription in the Karabel Pass that actually celebrates a ruler from Arzawa, a vassal state of these people. The possible historic Priam, Piyama-Radu, led revolts against these people.

ANSWER: **Hittites** [or **Hittite** people; accept **Hittite** Empire]

[10e] Sensusret III led at least four campaigns against this region immediately to Egypt's south along the Nile valley. In later times, the kingdom of Kush ruled this region from Meroë ("MAIR-oh-ee").

ANSWER: **Nubia** [or **Nobin** or an-**Nūba**; accept Upper **Nubia**; accept Lower **Nubia**; accept **Triakontaschoinos** or **Dodekaschoinos**; prompt on **Sudan** or Bilād as-**sūdān**; reject "Upper Egypt" or "Lower Egypt"]

<Other History>

10. Stephen Stearns introduced this term in proposing that variable juvenile mortality could explain why birds produce smaller clutches than Lack's principle might suggest. For 10 points each:

[10h] Name this term for strategies that decrease both arithmetic mean fitness and temporal variance in fitness.

ANSWER: **bet-hedging** [or word forms such as **hedge bets**]

[10e] Bet-hedging may underlie the delay in this process among dormant seeds. Horticulturists may promote this process using scarification or cold stratification.

ANSWER: **germination** [or word forms of **germinate**]

[10m] Among desert annuals, Jennifer Gremer and Larry Venable showed that competition alters the germination strategy that has this property. A strategy has this property when it resists invasion by any mutant strategy.

ANSWER: **evolutionary stable** strategy [or **evolutionarily stable** strategy; or **evolutionary stability**; or **ESS**]

<Biology>

11. Rallou Karatza, a princess of Wallachia, staged nationalistic dramas in support of this conflict. For 10 points each:

[10e] Name this conflict in which Karatza participated as a member of the "Society of Friends." Manto Mavrogenous appealed to the women of Paris after this conflict's massacre at Chios ("KEE-ose").

ANSWER: **Greek** War of **Independence** [or **Greek Revolution**; or **Greek Rebellion**; or **Elliniki Epanastasi**; or **Yunan İsyani**; or **Agonas**; accept descriptions of the **independence** of **Greece** or **independence** of **Hellas**] (The "Society of Friends" was the Filiki Eteria.)

[10h] In the "Dance of Zalongo," women from this Greek-speaking Albanian tribe in Epirus jumped off a cliff in a mass suicide. Markos Botsaris led members of this tribe at Missolonghi, where Lord Byron armed a band of 500 of them.

ANSWER: **Souliots** [or **Souliotes**]

[10m] Only in the late 1800s could women publicly express support for this irredentist concept that emerged from the Greek War of Independence. It advocated the unification of Greeks in Anatolia with those in Greece.

ANSWER: **Megali Idea** [accept **Great Idea**]

<European History>

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12. When God tries to teach this character to say the word “love,” he instead produces “Man’s bodiless prodigious head” and “woman’s vulva,” which then become locked in a death struggle. For 10 points each:

[10h] Name this character whose “First Lesson” and “Account of the Battle” are described in poems from a collection illustrated by Leonard Baskin in which he journeys through the universe in search of his female creator.
ANSWER: **Crow** [accept “**Crow**’s First Lesson”; accept “**Crow**’s Account of the Battle”; reject “bird” or “corvid” or “raven”]

[10e] Crow was created by this poet, whose collection *Birthday Letters* dramatizes his marriage to Sylvia Plath.
ANSWER: Ted **Hughes** [or Edward James **Hughes**]

[10m] This other Hughes poem describes a bird whose “wings hold all creation in a weightless quiet” and which “hangs still” before becoming trapped by the horizon in the last stanza.

ANSWER: “The **Hawk in the Rain**”
<British Literature>

13. The Motu people’s Hiri trade cycle swapped cooking pots for this crop, which was harvested year-round and traded for tobacco in New Guinea’s Sepik Coast exchange. For 10 points each:

[10h] Name this starchy crop that served as a famine food on Malaita and a staple in lowland Papua. It is more disease-resistant but less nutritious than the breadfruit, taro, and yams grown by Pohnpei’s Saudeleur dynasty.
ANSWER: **sago** palms [or **sagu** palms; accept true **sago** palms or *Metroxylon sagu*; accept queen **sagos** or queen **sago** palms or *Cycas rumphii*; prompt on **palm** trees or **Arecaceae**; prompt on **cycads** or *Cycas* or **gymnosperms**; prompt on **evergreens**]

[10m] Evidence that productive sweet potatoes replaced sago comes from one of these ecosystems called Kuk that also attests to banana domestication. Iron Age Nilotic peoples settled one of these places called the Sudd.

ANSWER: **swamps** [accept Kuk **Swamp**; prompt on **wetlands** or **marshes**; reject “bogs” or “fens”] (James Watson theorized that sweet potatoes ignited an “Ipomoean Revolution” in New Guinea; it possibly occurred in the 17th and 18th centuries. The Sudd is in modern-day South Sudan.)

[10e] Swamp taro was the staple crop of this modern-day Pacific island country whose population is based on Tarawa Atoll and whose name is not spelled phonetically.

ANSWER: **Kiribati** (“kih-rih-BASS”) [or Republic of **Kiribati**; or **Ribaberiki**]
<World History>

14. The multi-enzyme complexes that synthesize these molecules always end with a thioesterase module. For 10 points each:

[10h] Name these natural products that consist of alternating methylene and carbonyl groups. As they’re often chemotoxic, these molecules are popular starting points for the design of new antibiotics.

ANSWER: **polyketides**

[10e] Thioesterases cleave the bond between a polyketide’s terminal acetyl group and this coenzyme. This coenzyme is also bound to the acetyl groups that enter the Krebs cycle.

ANSWER: coenzyme **A** [or Co**A**; or acetyl-Co**A**]

[10m] Thioesterases catalyze this type of reaction during macrolide biosynthesis. Non-ribosomal peptides that have undergone this type of reaction have longer half-lives since they can only be cleaved by endopeptidases and not exopeptidases.

ANSWER: intramolecular **cyclization** [or **cyclase** reactions; or forming a **cyclic** compound; or **ring** formation; or **ring** closing]

<Chemistry>

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15. The “not-a-knot” condition on these functions requires continuity of the third derivative at the second and next-to-last points. For 10 points each:

[10m] Name these piecewise polynomial functions. Control points are used to adjust the shape of their “B” type.

ANSWER: **splines** [accept cubic **splines** or B-**splines**]

[10e] Splines are preferred over summing together polynomial basis functions for this task of approximating a function from a set of discrete data points.

ANSWER: **interpolation** [or **interpolating** a function or **interpolate** a function]

[10h] Unlike regression splines or natural splines, these splines do not require selecting knots, since they treat every unique value in the input as a knot. These splines control for overfitting by using a “sum of squared errors” loss function that is penalized by the “integral of the squared second derivative of the spline.”

ANSWER: **smoothing** splines [reject “smooth splines”]

<Other Science>

16. In this country, the activist Ruth Kissam has advocated against femicide related to traditional beliefs in black magic called sanguma. For 10 points each:

[10h] Name this country where Kessy Sawang and Rufina Peter were elected in 2022, leaving Tonga and Yemen as the only countries with no women in parliament.

ANSWER: **Papua New Guinea** [or **PNG**; or **Papua Niugini**; or Independent State of **Papua New Guinea**; or Independen Stet bilong **Papua Niugini**; reject “New Guinea” or “Papua”]

[10m] Women in Papua New Guinea often craft bilum bags, whose name may derive from this practice. Rebozos evolved from objects developed for this practice with a fiber back that could be attached to a saddle in Native American tribes.

ANSWER: **child carrying** [or equivalent such as **carrying** a **baby** or **transporting children**; accept **cradleboards**; accept **baby carriers**] (Bilum translates to “womb.”)

[10e] Raskol gangs target women during initiation in this capital of Papua New Guinea.

ANSWER: Port **Moresby** [or Pot **Mosbi**; or **Pom City**]

<Other Academic>

17. The poet Quintus Ennius found this poetic meter outdated, saying that “fauns and soothsayers” chanted in it. For 10 points each:

[10h] Name this early Latin poetic meter, perhaps of native Italic origin, that Gnaeus Naevius (“g’NYE-us NYE-wee-us”) used to write the epic *Bellum Punicum*. Scholars argue whether it is quantitative or accentual.

ANSWER: **Saturnian** meter [or **Saturnian** verse; or **Saturnians**]

[10e] Livius Andronicus used Saturnians for Latin’s first real literary work, a translation of this Greek epic poem that he began “tell me of the clever man.” Emily Wilson’s translation instead calls this epic’s hero a “complicated man.”

ANSWER: **Odyssey** [accept **Odusia**; accept **Odyssia**]

[10m] This poet called the Saturnian meter “horrid” and said his schoolmaster Orbilius beat pupils for not learning Andronicus properly. This poet used the uncommon Sapphic meter for his *Carmen Saeculare* (“CAR-men sigh-cue-LAH-reh”).

ANSWER: **Horace** [or Quintus **Horatius** Flaccus]

<European Literature>

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18. The title of an anti-racist history of psychology by Robert Guthrie notes that “even [this animal] was white.” For 10 points each:

[10e] Albino strains of what animal’s “Norwegian” species are often used in laboratory experiments?

ANSWER: **rats** [or lab **rats** or laboratory **rats**; accept white **rats**; accept Norwegian **rats**, brown **rats**, Norway **rats**, common **rats**, street **rats**, or *Rattus norvegicus*; accept *Even the Rat Was White*; prompt on rodents or murids; reject “mice” or “mouse”]

[10h] Guthrie’s book dedicates a chapter to this “Father of Black Psychology,” who was the first African-American to earn a PhD in psychology. This man echoed Booker T. Washington’s views on African-American education.

ANSWER: Francis **Sumner** [or Francis Cecil **Sumner**]

[10m] Guthrie criticizes this psychometric measure of intelligence, which Charles Spearman developed to capture overall cognitive ability, as opposed to task-specific ability.

ANSWER: **g** factor [or Spearman’s **g**; or **general** intelligence factor; or **general mental ability**; prompt on mental ability]

<Social Science>

19. In this city, the largest puppet collection in the world includes human-sized marionettes for the fairy tales of Italo Calvino. For 10 points each:

[10m] Name this city enclosed by the Golden Shell and Mount Pellegrino. The 1950s “Sack” of this city involved rampant, cheap urban development by Mafia contractors that threatened Arab-Norman buildings.

ANSWER: **Palermo** [or **Palermu**; accept Sack of **Palermo** or Sacco di **Palermo**]

[10h] Guy de Maupassant called this Palermo church “the most beautiful religious jewel dreamt of by human thought.” Roger II appears carved in wood muqarnas amidst Islamic calligraphy and Byzantine mosaics in this church.

ANSWER: **Palatine** Chapel [or Cappella **Palatina**; prompt on Palazzo dei Normanni or Norman Palace or Royal Palace of Palermo; prompt on Palace Church or Palace Chapel]

[10e] These objects were sprayed with vinegar before being hung on pipes in Palermo’s Capuchin Monastery. Depleted limestone mines store these objects in Paris’s Catacombs.

ANSWER: **corpses** [or **carcasses** or dead **bodies** or a dead **body**; or equivalents such as **dead people**; accept **mummies**; accept **skeletons**; accept **bones** or **skulls**]

<Geography>

20. In a Lascaux cave painting, a man with the head of one of these animals falls toward a bison. For 10 points each:

[10e] Name this general type of animal thought to represent the soul in Paleolithic religion. At his baptism, the Holy Spirit descended upon Jesus in the form of one of these animals.

ANSWER: **birds** [or **avians** or **Aves**; accept **doves** or **pigeons**]

[10h] The soul-as-bird motif from prehistoric shamanistic religion may have survived via tall poles topped by birds built in this region. Villages in this region house totem poles depicting male deities representing heaven and female deities representing the underworld.

ANSWER: **Korea** [or **Korean** Peninsula; accept North **Korea** or **Chosŏn** or **Joseon**; accept South **Korea** or **Hanguk** or **Minguk**; accept **Chungcheong**, **Gangwon**, **Gyeonggi**, **Gyeongsang**, **Hamgyong**, **Hwanghae**, **Jeolla**, or **Pvongan**; prompt on East Asia] (The bird poles are sotdae and the deity poles are jangseung.)

[10m] A parable about the soul, as represented by the ascending mythical bird Pēng (“pung”), appears in the opening “Carefree Wandering” section of this text, in which Huizǐ (“HWAY-dzuh”) challenges its title thinker’s claim that fish can be joyful.

ANSWER: **Zhuāngzǐ** [or **Chuang Tzǔ**]

<Religion>