

## CALISTO 2

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### Packet 7

1. **This book includes a drink recipe with ingredients like “Fallian marsh gas” and “Ol’ Janx Spirit.” A book within this book explains the slang phrase “There’s a frood who really knows where his towel is.” A Nutri-Matic machine in this novel that produces a liquid “almost, but not quite, entirely unlike tea” is found alongside the peppy computer Eddie and the depressed robot Marvin on the spaceship *Heart of Gold*. In this novel, a (\*) Vogon ship picks up Ford Prefect and Arthur Dent after destroying Earth to make way for a hyperspatial express system. For 10 points, name this Douglas Adams novel in which the answer to “Life, the Universe, and Everything” is revealed to be 42.**

ANSWER: *The Hitchhiker’s Guide to the Galaxy*  
<Long Fiction — Sheffield> [Edited]

1. The “wave” type of this process is used in the large-scale manufacturing of printed circuit boards. For 10 points each:

[M] Name this process in which metals are joined together by melting a filler metal alloy at the joint. The filler metal in this process melts at a lower temperature than that used in brazing (“BRAY-zing”), but unlike welding, the metals being connected are not melted.

ANSWER: **soldering** (“SAW-dur-ing”)

[E] The most common solder alloys are composed of tin and this dense heavy metal with atomic symbol Pb. Concerns about the toxicity of this metal has led to increased use of solder alloys without it.

ANSWER: **lead**

[H] Some tin-lead solder mixtures can be described as *this* kind of system, in which the melting point of a mixture is lower than the melting point of either of the components.

ANSWER: **eutectic** system

<Chemistry — Amanullah> [Ed. Schwartz]

2. **This artist painted himself holding a sword in his armpit in his *Self Portrait as the Apostle Paul*. This artist holds brushes and a palette in a self portrait that shows him standing in front of two circles. This artist used a brothel as the setting of a painting which depicts himself as the prodigal son along with his wife (\*) Saskia. In another painting by this artist, a doctor uses a pair of forceps to pull up the tendons of a corpse’s dissected arm. This artist applied so many layers of varnish to his group portrait of *The Shooting Company of Frans Banning Cocq* that it now seems like it is set at night. For 10 points, name this Dutch painter of *The Anatomy Lesson of Dr. Nicolaes Tulp* and *The Night Watch*.**

ANSWER: **Rembrandt** [or Rembrandt Harmenszoon **van Rijn**]  
<Painting — French> [Ed. Venkateswaran]

2. For 10 points each, answer the following about the activist LaNada War Jack:

[H] Starting in 1969, War Jack led a 19-month-long occupation of this island as a member of the group Indians of All Tribes. The occupants claimed this island under the Treaty of Fort Laramie and sought to build a cultural center for the study of Native American history on it.

ANSWER: **Alcatraz** Island

[E] War Jack was the first Native American student at this Bay Area university. This flagship school of the UC system was the first university in the country to adopt an ethnic studies program after a series of student strikes.

ANSWER: University of California, **Berkeley** [or **Cal** or Cal **Berkeley** or UC **Berkeley** or **UCB**; prompt on **University of California**]

[M] In 2016, War Jack participated in the mass protests against one of these projects at the Standing Rock Reservation. In spite of the protests, the “Dakota Access” one of these infrastructure projects opened in 2017.

ANSWER: crude oil **pipeline**s [accept Dakota Access **Pipeline** or Bakken **pipeline** or **DAPL**]

<American History — Delot-Vilain> [Edited]

3. **The kingdoms of Kuba and Luba flourished in a modern-day country with this name during the 17th century. A kingdom with this name was ruled by Afonso I, who sought to convert it to Catholicism and denounced Portuguese involvement in his realm’s slave trade. In a colony with this name, the Force Publique cut off the (\*) hands of native laborers who did not meet their rubber quotas. A modern-day country with this name was seized by King Leopold II of Belgium in the 19th-century Scramble for Africa. For 10 points, give this name shared by a “Republic” and a “Democratic Republic” in Central Africa.**

ANSWER: **Congo** [accept Democratic Republic of the **Congo** or Republic of **Congo** or Kingdom of **Kongo** or **Congo** Free State or Belgian **Congo**]

<World History — Prabhakar> [Edited]

3. This group hired the jazz double-bassist Ron Carter to play on their song “Verses from the Abstract.” For 10 points each:

[H] Name this hip-hop group composed of Q-Tip, Phife Dawg, Ali Shaheed Muhammad, and Jarobi White. This group sampled jazz musicians like Eric Dolphy and Art Blakey on the album *The Low End Theory*.

ANSWER: A **Tribe Called Quest**

[M] Q-Tip highlights the connection between hip-hop and jazz on the track “Excursions,” where he raps “My pops used to say, it reminded him of” this genre of jazz. Charlie Parker pioneered this genre of jazz, which is characterized by a rapid tempo and complex chord progressions.

ANSWER: **bebop** [or **bop**]

[E] A Tribe Called Quest’s final album, *We Got It from Here...*, featured guest appearances by, among others, this rapper, who composed the jazz-inspired hip-hop album *To Pimp a Butterfly*.

ANSWER: Kendrick **Lamar** [or **Kendrick**]

<Misc. Art — French> [Edited]

4. **One of this planet’s moons has a landscape of uniform circular depressions that likely formed through diapirism (“dye-AP-eer-izm”). A type of exoplanet called a “mini-[this planet]” occupies the upper mass range of a “super-Earth.” Solar system bodies called “trans-[this planet]” objects orbit between 30 and 50 AU (“A-U”) from the Sun. Urbain Le Verrier (“ur-bahn luh vayr-yay”) calculated the (\*) position of this planet from perturbations in another planet’s orbit. Voyager 2 discovered a large anticyclone on this planet called the Great Dark Spot. This planet’s largest moon is Triton. For 10 points, name this eighth and farthest planet from the Sun.**

ANSWER: **Neptune** [accept mini-**Neptune**s or trans-**Neptunian** objects; prompt on **TNOs**] (The first sentence refers to Triton’s cantaloupe terrain.)

<Astronomy — Yin> [Edited]

4. For 10 points each, answer the following about chess endgame theory:

[E] Endgames in which each side has a king, pawns, and one of these pieces often tend to lead to draws. These pieces start in the corners of the board and move only vertically and horizontally.

ANSWER: **rooks** [or **castles**]

[M] A rule often used during the endgame allows players to claim a draw when the same position occurs this number of times.

ANSWER: **three** [accept **threefold repetition**]

[H] The situation known by this German term occurs most frequently in the endgame. In this situation, the active player is forced to make a move that puts them at a disadvantage.

ANSWER: **zugzwang** [prompt on **forced move**]

<Other — Panickssery> [Ed. Gray]

5. **Jonah 2:8 claims that those who engage in this practice “forsake the hope of steadfast love.” John of Damascus’ arguments that a certain practice was *not* an example of this practice were accepted at the Second Council of Nicaea (“nigh-SEE-uh”). In Islam, the only sin that will not be forgiven without repentance is this practice, which is called *shirk*. In the 8th century, Byzantine Emperor (\*) Leo III banned a *different* practice on the grounds that it was an example of this practice. Moses breaks the two Tablets of the Law when he sees his people performing this practice with a golden calf. For 10 points, the First Commandment forbids what practice in which people worship things that are not God?**

ANSWER: **idolatry** [or any answers involving **idols**; accept **polytheism**; prompt on descriptions such as **praying to statues** or **worshipping things other than God**; do NOT accept or prompt on “venerating icons” or other answers involving icons] (The Second Council of Nicaea resolved the iconoclast controversy.)

<Religion — Dai> [Ed. French]

5. In one of his schemes to make money, this character steals CO<sub>2</sub> cylinders from life vests, leaving them unable to inflate. For 10 points each:

[H] Name this character who establishes a syndicate called M&M Enterprises. This character, a satirical critique of capitalism, ludicrously buys eggs at seven cents each and sells them at five, but still profits.

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

[M] This friend of Milo frequently thinks about Snowden’s brutal death on a bomber mission. This protagonist of a 1961 novel attempts, but never succeeds, to get dismissed from his post on the island of Pianosa.

ANSWER: John **Yossarian** [or **Yo-Yo**; prompt on **John**]

[E] Milo and Yossarian feature in this World War II novel by Joseph Heller, whose title is the origin of a phrase referring to a contradictory situation.

ANSWER: **Catch-22**

<Long Fiction — Lin> [Edited]

6. **In 2020, seventeen-year-old Darnella Frazier won a PEN prize for filming video in this state. A thousand people have been arrested protesting the Line 3 pipeline going through Anishinaabe land in this state. In April 2021, a police officer in this state claimed to accidentally pull a gun instead of a taser, leading to the murder of (\*) Daunte Wright. Nancy Pelosi drew criticism for saying a man “sacrificed his life for justice” after a trial in this state. Eight minutes and forty-six seconds became a national symbol of racism after a man in this state was killed in 2020 by Derek Chauvin. For 10 points, name this state where George Floyd was murdered in Minneapolis.**

ANSWER: **Minnesota**

<Current Events — Ashbrook> [Edited]

6. One of these jars is personified by the baboon-headed god Hapi, while another depicts the human face of Imsety. For 10 points each:

[M] Name these jars that held the lungs, liver, intestines, and stomach of an Egyptian mummy. These jars preserved those organs for the buried person to use in the afterlife.

ANSWER: **canopic jars** [prompt on **jars**]

[E] The canopic jars are protected by the four sons of this deity. The wadjet eye is a symbol of this falcon-headed god who loses one of his eyes in a battle against Set.

ANSWER: **Horus**

[H] Instead of being kept in a canopic jar, the heart was left in the body to be weighed against the feather of Ma'at. If the heart was heavier, it was devoured by this demoness, who is part hippopotamus, part lion, and part crocodile.

ANSWER: **Ammit**

<Mythology — An> [Ed. Venkateswaran]

7. **An innovative attention model for this kind of data without use of a recurrent neural network underlies the “transformer” model. Embeddings are most often used to decrease the dimension of this kind of data. A “bag” model of this kind of data is less sophisticated than n-gram models. Statistical models of this kind of data may have steps to perform tagging, tokenization, and stemming.** (\*) GPT-3 generates very realistic data of this kind. Regular expressions parse this kind of data, and concatenation combines it. This kind of data might be represented as arrays of bytes encoded in ASCII. For 10 points, name this kind of data held in strings that consist of characters.

ANSWER: **textual data** [accept **strings** before mention or any descriptions referring to written **words**; reject answers referring to spoken words]

<Computer Science — Gray> [Edited]

7. John Kani recounted how a colonel accused him of hatching a “communist plot” to violate the Immorality Act by kissing a white woman on stage in an essay titled for this system “and Othello.” For 10 points each:

[E] Name this system of racial segregation in South Africa.

ANSWER: **apartheid** [accept “**Apartheid** and Othello”]

[M] John Kani played a man imprisoned for opposing apartheid in *The Island*, which he wrote in collaboration with Winston Ntshona and this playwright. Hally asks to be called “Master Harold” in this playwright’s *Master Harold... and the Boys*.

ANSWER: Athol **Fugard**

[H] In another play by John Kani, Lunga Kunene cares for an actor who is diagnosed with cancer after being cast as one of these people. In another play, the death of one of these people necessitates that Elesin undergo ritual suicide.

ANSWER: **king** [accept *Kunene and the King* or **King** Lear or *oba*; prompt synonyms like **ruler**; do NOT accept or prompt on “king’s horseman”] (The other play is *Death and the King’s Horseman* by Wole Soyinka.)

<Drama — French> [Edited]

8. **In a novel by this author, villagers put out a house fire but then destroy the house while chanting, “Merricat, said Constance, would you like a cup of tea?” One of this author’s characters wonders, “Why don’t they stop me?” as she drives into a tree, and sees “HELP ELEANOR COME HOME” scrawled on the wall of the title mansion. A saying ending (\*) “corn be heavy soon” is used in a story by this author to justify a ritual involving Mr. Summers’ black box. This author of *We Have Always Lived in the Castle* and *The Haunting of Hill House* ended a story with screams of “It isn’t fair, it isn’t right” as Tessie Hutchinson is stoned to death. For 10 points, name this author of “The Lottery.”**

ANSWER: Shirley **Jackson**

<Other Literature — Sheffield> [Edited]

8. For 10 points each, answer the following about triploid animals:

[M] Triploid species have three sets of these things, while diploid species have two. During meiosis, nondisjunction errors can cause gametes to have an abnormal number of these things.

ANSWER: **chromosomes** [accept number of **chromosomes** or **chromosome** number or **chromosome** count]

[H] The marbled crayfish is a triploid species that reproduces through this process. An embryo develops from an unfertilized egg in this form of asexual reproduction.

ANSWER: **parthenogenesis**

[E] Triploid cultivars of these molluscs can be eaten year-round, as they do not have a spawning period. These relatives of clams and mussels are often farmed for their pearls.

ANSWER: **oysters** [accept **Ostreidae** or **Ostreoidea**; prompt on **bivalves**]

<Biology — Yin> [Edited]

9. **This woman bought a small farm in Auburn owned by Frances Seward, which she later converted into a nursing home. A non-chronological biography titled “Scenes in the Life of [this woman]” recounts how this woman’s narcolepsy was induced by a blow to the head with an iron weight as a teenager. This woman led the (\*) Combahee River Raid and served as a Union spy during the Civil War. In 2016, the Treasury announced plans to place this woman’s portrait on the front of the twenty-dollar bill. For 10 points, name this woman, a “conductor” on the Underground Railroad who led slaves to freedom.**

ANSWER: Harriet **Tubman** [or Araminta **Ross**; accept *Scenes in the Life of Harriet Tubman*]

<American History — Lin> [Ed. Delot-Vilain]

9. For 10 points each, answer the following about a typical ballet class:

[M] Dancers usually begin class by warming up at one of these handrails found in most ballet studios. Ballerinas train with one hand on this handrail to provide support.

ANSWER: **barre** [accept **bar**]

[H] While at the barre (“bar-AY”), dancers perform exercises such as tendus (“ton-DO”) and ronde de jambes (“rond de JOM”) from this position. This position is the last of the ballet positions, and a spring from a demi-plie into a relevé (“reh-leh-VAY”) from this position is called a sous-sus.

ANSWER: **fifth** position

[E] More advanced ballerinas may progress to dancing en pointe (“on PWAN”), in which they wear a special pair of this article of clothing with wooden boxes that allow them to stand on their toes.

ANSWER: pointe **shoes** [or ballet **shoes** or ballet **slippers**]

<Misc. Art— An> [Edited]

10. **A rock balancing on a boulder in this body of water is named Bismarck rock. The natural outlet of this body of water, the Ripon Falls, was flooded after the construction of the Owen Falls Dam. An invasive species of perch has caused the extinction of many of this body’s (\*) native cichlids. Richard Burton fell out with John Hanning Speke due to a claim by the latter about this lake. Cities on this lake include Kampala, the capital of Uganda. Henry Morton Stanley confirmed Speke’s claim that this lake is the source of the White Nile. For 10 points, name this largest African lake by area, which is named after a British queen.**

ANSWER: Lake **Victoria**

<Geography — French> [Edited]

10. According to legend, when a flock of geese saw Wang Zhaojun (“jao-june”) on her northward journey to marry the leader of this people, they were so captivated by her that they forgot how to fly and fell to the ground. For 10 points each:

[H] Name this nomadic Eurasian people who were united under the leadership of Modu Chanyu to form a steppe empire in the late 2nd century BCE. Historians have attempted to linguistically connect this people with the Huns.

ANSWER: **Xiongnu** (“sh’yung-noo”)

[M] This Chinese dynasty employed a policy of *heqin* (“huh-chin”) against the Xiongnu, offering Modu Chanyu a Chinese princess’s hand in marriage. This dynasty was founded by Liu Bang (“l’yoh bahng”) after the collapse of the Qin (“chin”) dynasty.

ANSWER: **Han** dynasty [or *Hanchao*; accept Western **Han** or *Xihan*]

[E] The *heqin* policy was later revived by the Tang when Princess Wencheng (“win-chung”) was sent to marry this region’s king Songtsen Gampo. A monastery in this Himalayan region’s capital of Lhasa was built to house a Buddha statue she supposedly brought.

ANSWER: **Tibet** [or *Bod* or *Xizang*; accept **Tibetan Empire** or *Tufan* or *Tube*]

<World History — Ma> [Edited]

11. **The French horn plays a D major solo in 12/8 time near the beginning of the second movement of this composer’s E minor fifth symphony. The strings play pizzicato throughout the scherzo (“SCARE-tsoh”) of this composer’s F minor fourth symphony. The bassoon is instructed to play at a nearly impossible dynamic marking of (\*) pppppp (“six p’s”) in this composer’s sixth symphony, which also features a “limping waltz” in 5/4 time. “La Marseillaise” and “God Save the Tsar” are quoted in a piece by this composer that features cathedral bells and cannons as instruments. For 10 points, name this Russian composer of the *Pathetique* symphony and the *1812 Overture*.**

ANSWER: Pyotr Ilyich **Tchaikovsky**

<Classical Music — An> [Ed. Ma]

11. The proof of the first theorem with this name finds through diagonalization a sentence that assumes its own unprovability. For 10 points each:

[H] Give this name of a theorem states that any set of consistent axioms results in statements that can neither be proved nor disproved.

ANSWER: Gödel’s **incompleteness** theorem [accept Gödel’s first **incompleteness** theorem]

[E] Gödel’s incompleteness theorems apply to formal systems in which operations from this branch of math can be carried out. This elementary branch of math deals with addition and multiplication of whole numbers.

ANSWER: **arithmetic** [prompt on **number theory**]

[M] This computer scientist reformulated Gödel’s work in terms of his namesake theoretical “machines” to prove that there exists no possible algorithm to solve the halting problem.

ANSWER: Alan **Turing**

<Math — Sheffield> [Ed. Bowman]

12. **Police forces in this country supposedly gave political dissidents cancer using a weapon called the “Radu gun.” Decree 770 outlawed contraceptives and abortion in this country, which was issued by a dictator who wrote the July Theses. This country’s secret police force, the Securitate, was founded during the tenure of its first communist leader Gheorge Gheorghiu-Dej (“GHE-yor-GE GHE-yor-gi-yoo Dej”). This country’s communist regime ended when that dictator and his wife (\*) Elena were executed on live TV on Christmas day in 1989. Historic regions of this country include Moldavia and Transylvania. For 10 points, name this Eastern European country where the dictator Nicolae Ceausescu ruled from Bucharest.**

ANSWER: **Romania** [accept the Socialist Republic of **Romania**; accept the **Romanian** People’s Republic; accept Republica Socialista **Romania**; accept Republica Populara **Romania**]

<European History — Ashbrook> [Ed. Prabhakar]

12. While lying next to Maria, a character in this novel contemplates his impending death and reflects that “maybe I have had all my life in three days.” For 10 points each:

[H] Name this novel which ends as the injured protagonist lies in wait for Lieutenant Berrendo. In this novel, the young Joaquín desperately prays to God just before he and the rest of El Sordo’s men are killed in a bombing raid.

ANSWER: ***For Whom the Bell Tolls***

[E] This author depicted Robert Jordan’s work as a *partizan* in the Spanish Civil War in his novel *For Whom the Bell Tolls*. This author also wrote *The Sun Also Rises* and *The Old Man and the Sea*.

ANSWER: Ernest **Hemingway** [or Ernest Miller **Hemingway**]

[M] Hemingway took the title of *For Whom the Bell Tolls* from this poet’s “Meditation XVII,” which also declares, “No man is an island.” The speaker compares himself and his lover to two legs of a compass in this poet’s “A Valediction: Forbidding Mourning.”

ANSWER: John **Donne**

<Other Literature — Lin> [Edited]

13. **In one experiment, these animals were grouped into yoked pairs where one of them had an effective lever and the other did not. A psychologist-slash-surgeon who was studying gastric functions in these animals also ran an experiment on them that employed whistles and tuning forks. Martin Seligman found that groups of these animals that were given inescapable shocks would later not try to escape being shocked, displaying (\*) “learned helplessness.”** The presence of stimuli like the ticking of a metronome caused these animals to salivate in a series of experiments on classical conditioning. For 10 points, name these animals, the subjects of experiments by Ivan Pavlov.

ANSWER: **dogs** [or **canines**; accept Pavlov’s **dogs**]

<Psychology — An> [Edited]

13. Pope Clement V issued the bull *Vox in excelso* to dissolve this organization. For 10 points each:

[H] Name this organization that was accused of apostasy, idolatry, and sodomy by the church. Philip IV of France killed most members of this organization, including its leader Jacques de Molay.

ANSWER: **Knights Templar**

[E] The Knights Templar were an order of knights that formed during these conflicts, which sought to capture Jerusalem. The Knights Templar fought Saladin at the Siege of Acre during the third of these conflicts.

ANSWER: **Crusades** [accept Third **Crusade**]

[M] Because of the large donations provided to them, the Knights Templar were able to venture into an early form of this industry. The Fugger family gained much of their wealth from copper mining and this industry.

ANSWER: **banking**

<European History — Athreya> [Ed. Delot-Vilain]

14. **A complex responsible for splitting this compound cycles through five “S-states” and is located in photosystem II. This compound is produced in the final reduction reaction of the electron transport chain. CAM organisms adapt to low levels of this compound by activating either mesophyll or bundle sheath cells based on the time of (\*) day.** This compound, the most common byproduct of biological condensation reactions, is added in order to break down ATP into ADP and a free phosphate ion. Carbon dioxide and this molecule are combined to form sugars and oxygen gas in photosynthesis. For 10 points, name this molecule, essential for life, with formula H<sub>2</sub>O.

ANSWER: **water** [or **H<sub>2</sub>O** until it is read]

<Biology — Sheffield> [Edited]

14. The Cape Hatteras National Seashore protects this chain, which has been called the “Graveyard of the Atlantic” for its tendency to wreck ships. For 10 points each:

[H] Name this series of barrier islands which separates Pamlico Sound from the ocean. Towns like Buxton and Avon are holiday destinations on these islands.

ANSWER: The **Outer Banks**

[E] The Outer Banks are off the east coast of this state, while Roanoke Island lies between the Outer Banks and this state’s mainland. This state’s Research Triangle near Raleigh and Durham contains Duke University.

ANSWER: **North Carolina**

[M] This town also lies on the Outer Banks. This town is often credited as the site of the Wright brothers’ first flight, despite the actual flight occurring several miles south.

ANSWER: **Kitty Hawk**

<Geography — Gray> [Edited]

15. **This poet wrote, “The everlasting universe of things / Flows through the mind,” to begin a poem written “in the Vale of Chamouni.” This author of “Mont Blanc” described leaves blowing like “pestilence-stricken multitudes” in a poem addressed to “thou breath of Autumn’s being.” This poet described a “boundless and bare” landscape of “lone and (\*) level sands” at the end of a poem about a “shattered visage” with a “wrinkled lip, and sneer of cold command.” That poem describes a pedestal which reads, “Look on my works, ye mighty, and despair!” For 10 points, name this Romantic poet of “Ozymandias” whose wife wrote *Frankenstein*.**

ANSWER: Percy Bysshe **Shelley**

<Poetry — French> [Edited]

15. A religious movement founded in this country holds mass wedding ceremonies so that adherents can be accepted into the lineage of God. For 10 points each:

[H] Name this country where the Unification Church was founded by a pastor referred to as the “True Father.”

ANSWER: **South Korea** [or **Republic of Korea** or **ROK**; prompt on Korea; do NOT accept or prompt on “Democratic People’s Republic of Korea” or “DPRK”]

[M] The founder of the Unification Church, Sun-Myung Moon, combined Christian beliefs with the ideas of this tradition, inspired by his childhood reading of the *Analects*.

ANSWER: **Confucianism**

[E] In the early 2000s, Moon led a tour across America that sought to remove this symbol from poor churches in an attempt to unite them. This symbol represents the object on which Jesus was executed.

ANSWER: **cross** [or **crucifix**]

<Religion — Bowman> [Edited]

16. **This group was targeted and nearly wiped out by a scorched earth expedition led by John Sullivan.**

**Jigonsaseh (“JUH-gon-SA-zay”) founded this group with two men, including the “Great Peacemaker.” This group was supported by the Dutch and English against the French and Algonquians (“al-GUNG-kwee-uns”) during the (\*) Beaver Wars. This group was governed under the Great Law of Peace and was led by Joseph Brant during the American Revolution. During the Revolutionary War, this group’s Tuscarora (“TUH-skuh-ROW-ruh”) and Oneida Nations split from the rest of the group to side with the Americans. For 10 points, the Seneca and Mohawk Nations were part of what confederation of six Native American tribes in upstate New York?**

ANSWER: **Iroquois** Confederacy [or **Haudenosaunee** or **Six Nations** or **Iroquois** League or **Five Nations**; prompt on Mohawk or Cayuga or Seneca or Onondaga or Tuscarora or Oneida by asking “what larger confederation was that group a part of?”]

<American History — Prabhakar> [Ed. Delot-Vilain]



16. Lord Kelvin invented an early device employed in this discipline that used a piano wire with a lead weight attached. For 10 points each:

[H] Name this field of study which measures the depth of oceans or lakes at different points to produce a terrain map of the seabed or lake bed.

ANSWER: **bathymetry** (“buh-THI-muh-tree”) [accept **bathymetric** maps]

[M] Bathymetry often uses multibeam echosounders, a type of this technology, to map the seabed. This technology measures distance based on the reflection of sound waves.

ANSWER: **sonar** [or **sound navigation and ranging**]

[E] Another method used in bathymetry is lidar (“LYE-dar”), which reflects the beams produced by these devices off the seafloor. These devices emit light via stimulated emission and can be found in pointers for presentations.

ANSWER: **lasers** [accept **laser** beams or **light amplification by stimulated emission of radiation**]

<Earth, Ocean, and Atmospheric Sciences — Bowman> [Edited]

17. For the 2021 Met Gala, this celebrity wore a luxurious gold Versace cape over a suit of golden armor and a crystal-encrusted catsuit. This celebrity created a “baby registry” to raise money for LGBTQ nonprofits that accompanied a controversial pregnant photoshoot. Nike sued this celebrity for collaborating with MSCHF in creating a series of (\*) shoes containing a drop of human blood. In a music video, this celebrity descends a stripper pole to Hell, seduces Satan, and snaps his neck. This artist’s song *Industry Baby* appears on his new album *Montero*. For 10 points, name this hip-hop artist who collaborated with Billy Ray Cyrus on “Old Town Road.”

ANSWER: Lil **Nas X** [or *Montero Lamar Hill*; do NOT accept or prompt on “Nas” alone]

<Pop Culture — Bowman> [Edited]

17. For 10 points each, answer the following about process art, in which the method by which art is created is just as important as the final product:

[M] Process art is often thought of to have originated from this other art movement. Helen Frankenthaler was a member of this movement, as was another artist of “drip paintings” like *Lavender Mist*.

ANSWER: **abstract expressionism** [prompt on **AbEx**; prompt on **action painting** or **color field** by asking, “What broader movement was that a part of?”]

[H] Critics consider this American artist of *Equal-Parallel* as part of the process art movement. This artist’s installation *Tilted Arc* was removed from public view after critics derided the sculpture as awkward and ugly.

ANSWER: Richard **Serra**

[E] One work by process artist Robert Morris titled *Untitled (Corner Piece)* entirely consists of one of these shapes in the corner of a room. These shapes have three sides.

ANSWER: **triangles**

<Sculpture — Miles> [Ed. Venkateswaran]

18. **The initial velocities in this kind of interaction are presumed to be uncorrelated in the molecular chaos assumption. Particles solely experience this kind of interaction in the kinetic theory of gases, which treats particles as hard spheres. The center-of-momentum frame is often used to simplify problems where two (\*) bodies undergo this kind of interaction. This type of interaction, which can be described by the coefficient of restitution, conserves momentum but not kinetic energy in its inelastic type. For 10 points, name this type of interaction in which two objects might bounce off of each other.**

ANSWER: **collisions** [accept word forms like **colliding**; accept elastic **collision**s; accept inelastic **collision**s; accept **scattering**]

<Physics — Bowman> [Edited]

18. The Duke of Schomberg was killed while crossing this battle's namesake river, despite advising against the crossing. For 10 points each:

[H] Name this 1690 battle at which forces loyal to William III defeated those of James II during the Williamite War. This battle is commemorated by a holiday known as the Twelfth.

ANSWER: Battle of the **Boyne**

[M] The Williamite War began after this 1688 event that resulted in the passage of the English Bill of Rights. A letter from the "Immortal Seven" sparked this event in which William and Mary took the English throne.

ANSWER: **Glorious Revolution**

[E] The Battle of the Boyne took place on this island, whose Catholic majority had much of its land confiscated by the Protestant English government. This island was later the site of a great potato famine under British rule.

ANSWER: **Ireland**

<European History — Prabhakar> [Ed. Delot-Vilain]

19. **This author created a soldier who notices the "lofty sky" while lying wounded on the ground following a battle. In one of this author's novels, a French soldier shoots the wise Christian peasant Platon for lagging behind his fellow captives. After failing to elope with Anatole Kuragin in that novel by this author, (\*) Natasha Rostov ultimately finds love with Pierre Bezukhov. In another novel by this author, the title character throws herself under a train after an affair with Count Vronsky. For 10 points, name this author who wrote *Anna Karenina* and depicted Napoleon's 1812 invasion of Russia in his novel *War and Peace*.**

ANSWER: Leo **Tolstoy** [or Count Lev Nikolayevich **Tolstoy**]

<Long Fiction — Lin> [Edited]

19. An essay by W. V. O. Quine criticizes "two dogmas" of this position, including a form of reductionism derived from verification theory. For 10 points each:

[M] Name this epistemological position held by John Locke and David Hume. This position claims that all or almost all knowledge comes from sensory experience.

ANSWER: **empiricism** [accept "Two Dogmas of **Empiricism**"]

[H] The other dogma attacked in Quine's essay is the distinction between analytic truths and truths of this type. Immanuel Kant defined *a priori* propositions as being of this type if they were not derived from pure reason.

ANSWER: **synthetic** [accept **synthetic a priori**]

[E] In his attack, Quine argued that any explanation of analyticity requires an explanation of this property, which in turn requires an explanation of analyticity. Two words are said to have this property if they have the same meaning.

ANSWER: **synonymy** [or word forms like **synonym** or **synonymous**]

<Philosophy — Miles> [Ed. French]

20. **At the end of a film in this city, a man jumps out of a hospital window, so his daughter looks out to see where he went, then looks up. That film set in this city sees a stage adaptation of "What We Talk About When We Talk About Love" put on by a washed-up actor played by Michael Keaton. In another film set in this city, the line "You talkin' to me?" is delivered by Robert de Niro's character, (\*) Travis Bickle. This setting of *Birdman* and *Taxi Driver* is the primary setting of a film in which Leonardo DiCaprio plays Jordan Belfort, whose decadent parties are funded by his career as a financier. For 10 points, name this city where *The Wolf of Wall Street* takes place.**

ANSWER: **New York** City [or **NYC**]

<Film — French> [Edited]

20. The speaker asks, “Was Christ Himself not nailed to a tree?” at the end of a poem about one of these events by Angelina Weld Grimké. For 10 points each:

[M] Name these events. Another poem about these events describes the “scent of magnolias, sweet and fresh” and is titled “Strange Fruit.”

ANSWER: **lynchings** [accept **hangings**; prompt on **murder** or **killing**]

[H] This poet described “little lads” who “danced round the dreadful thing in fiendish glee” in his poem “The Lynching.” This poet, who was born in Jamaica, pleaded, “If we must die, let it not be like hogs” in his poem “If We Must Die.”

ANSWER: Claude **McKay**

[E] Angelina Weld Grimké and Claude McKay both became prominent during this 1920s movement, which saw an explosion of African-American art and literature. This movement is named for a neighborhood in New York.

ANSWER: **Harlem Renaissance**

<Poetry — Lin> [Ed. French]