

Round 4

First Half

(1) **One of this writer's best known sonnets ends with the line "They also serve who only stand and wait." That work is a reference to this man's blindness, titled "When I consider how my light is spent." This author of *Areopagitica* [[ah-reh-oh-pah-GIH-tih-kah]] wrote about the (*) temptation of Adam and Eve by the fallen angel Satan in his best known work. For ten points, name this English poet and author of *Paradise Lost*.**

ANSWER: John **Milton**

(bonus) This character speaks of the "calamity of so long life" in a speech ending with his memories of "the fair Ophelia." For ten points each,

* Name this prince of Denmark who asks "to be, or not to be" in a soliloquy [[soh-LIH-loh-kwee]].

ANSWER: **Hamlet**

* This mother of Hamlet earns her son's ire by quickly marrying Claudius after the death of her former husband.

ANSWER: Queen **Gertrude**

* After being mortally wounded, Hamlet asks this friend of his to "draw thy breath in pain / To tell my story." This is the character to whom Hamlet says, "Alas, poor Yorick! I knew him..."

ANSWER: **Horatio**

(2) **This book begins with a letter to the "Seven Churches of Asia" and goes on to describe a series of prophetic visions, including one of a Seven-Headed Dragon. This book's author may have been John (*) of Patmos. Significant events in this book include the sounding of seven trumpets, the opening of seven seals, and the arrival of the Four Horsemen of the Apocalypse. For ten points, name this final book of the Christian New Testament.**

ANSWER: Book of **Revelation** (accept **Apocalypse of John** before "Apocalypse"; accept **Revelation** to John; accept **Revelation from Jesus Christ**; do not accept "Revelations")

(bonus) In this work, the steed Burāq [[boo-RAHK]] is ridden to al-Aqsa [[ahl-AHK-sah]] during the Night Journey. For ten points each,

* Name this scripture, a series of holy revelations given to the prophet Muhammad.

ANSWER: The **Quran** (accept al-**Qur'ān**)

* This archangel gave Muhammad his first revelation and later turned the Battle of Badr [[bah-DEER]] in Muhammad's favor.

ANSWER: **Jibril** (accept **Gabriel**)

* Muhammad led his followers from Mecca to this second holiest city of Islam during the Hijra.

ANSWER: **Medina** (accept Al **Madinah** Al Munawwarah)

(3) **Unlike mammals, these animals have a shortened large intestine including a corkscrew-shaped spiral valve. These animals possess an electroreceptive organ called the Ampullae [[am-PYOO-lee]] of Lorenzini. The smallest type of these animals is the (*) dwarf lantern variety. The closest relatives to these animals include skates and rays, and the largest known of these animals was the megalodon. For ten points, name this group of cartilaginous [[kar-tih-LADJ]-ih-nuss]] fish which includes the Great White.**

ANSWER: **Sharks** (accept **Selachimorpha**; accept **Selachii**; prompt on "fish" or "cartilaginous fish")

(bonus) There is about a fifteen percent mortality rate for people who ingest the *Amanita phalloides* [[fah-LOY-deez]], or death cap, type of this structure. For ten points each,

* Name these fungal reproductive structures which grow above ground and release spores. Portobello and shiitake are edible varieties of these structures.

ANSWER: **Mushrooms** (accept **Toadstools**; prompt on "fruiting body")

* Anatomically, mushrooms and other fruiting bodies can be described as a specialized one of these masses of fungal hyphae [[HAI-fee]].

ANSWER: **Mycelium** [[mai-SEE-lee-um]] (accept **Mycelia**; prompt on "thallus")

* Within the cap of a mushroom, this process, a type of reductive cell division, occurs to generate the haploid spores from a diploid parent cell.

ANSWER: **Meiosis** (accept **Meiotic** division)

(4) **In this county, an extinct volcano ridge named Benham Rise is called "loneliness from an isolated place." The longest river in this country is the Cagayan, whose source is in the Caraballo [[kah-rah-BYE-yoh]] Mountains. In 2006, mudflows from Mount (*) Mayon [[MAI-yohn]] killed over 1200 people in this nation, which was also the site of the largest volcanic ejection since Krakatoa in 1991 when Mount Pinatubo erupted. For ten points, name this Southeast Asian island nation, whose island of Luzon contains its capital, Manila.**

ANSWER: Republic of the **Philippines** (or Republika ng **Pilipinas**)

(bonus) Western and southern portions of this city are connected by the Bandra-Worli Sea Link. For ten points each,

* Name this Indian city with some 20 million inhabitants, formerly known as Bombay.

ANSWER: **Mumbai**

* Mumbai is located in this Indian state, the second-most populous, in which Marathi is the official language.

ANSWER: **Maharashtra** [[mah-hah-RAHSH-trah]]

* Mumbai is the largest port on this sea, which is also bordered by seaports in Muscat and Karachi.

ANSWER: **Arabian** Sea (accept Bahr al-**Arab**)

(5) **To spite this colony's Protestant founder, the spymaster of Queen Elizabeth, Francis Walsingham, may have orchestrated its downfall. The death of Chief Granganimeo [[grahn-gahn-ih-MEH-oh]] led to food (*) shortages in this John White-led colony. The word "Croatoan," found etched into a tree, was interpreted as a message that the inhabitants of this colony had fled to Hatteras Island. For ten points, name this ill-fated British colony sponsored by Sir Walter Raleigh.**

ANSWER: **Roanoke** Colony (prompt on "Lost Colony")

(bonus) Many influential figures in American history never got to reach their full potential due to an assassin's bullet. For ten points each,

* This mayor of Chicago was assassinated by Giuseppe Zangara, who may have been trying to kill FDR.

ANSWER: Anton **Cermak**

* After emerging victorious from the South Dakota and California Democratic primaries, this presidential hopeful was killed by Sirhan Sirhan in 1968.

ANSWER: **Robert F(rancis) "Bobby" Kennedy** (accept **RFK**; accept **Bobby Kennedy**; prompt on "Kennedy")

* This president and Civil War general was only 49 years old when he was shot down by the Stalwart, Charles Guiteau [[gee-TOH]].

ANSWER: James A(bram) **Garfield**

(6) **The kissing number quantifies the packing of these objects, two of which can be constructed by decomposing a single larger one in the Banach [[BAH-nahkh]]-Tarski paradox. The coordinate system named for these objects uses a radius coupled with azimuthal [[az-ih-MYOO-thul]] and (*) polar angles. The volume of these objects equals "four-thirds pi times the radius cubed." For ten points, name these 3D objects defined as the set of points equidistant from a fixed center.**

ANSWER: **Spheres** (prompt on "Ball(s)," "Globe(s)," or other spherical objects)

(bonus) The first description of this number sequence appears in the 1204 mathematical text *Liber Abaci* [[LEE-behr ah-BAH-kee]]. For ten points each,

* Name this sequence of numbers which begins "1, 1, 2, 3, 5." The next term in this sequence is always formed by adding the two preceding numbers.

ANSWER: **Fibonacci** [[fee-boh-NAH-chee]] Sequence (accept **Fibonacci** Number(s))

* The ratios of consecutive Fibonacci numbers converge toward a value with this name. This value can be written as one-half times the quantity one plus root five.

ANSWER: **Golden ratio** (accept **Golden mean**; accept **Golden section**; prompt on "phi")

* The irrationality of the golden ratio can be demonstrated with this type of proof by assuming it is rational, which leads to an invalid conclusion.

ANSWER: Proof by **Contradiction** (accept **Indirect** proof; accept Proof by **Assuming the Opposite**; accept **Reductio ad absurdum**)

(7) **In a frame story about this literary character, he tells an impoverished porter in a marketplace about bringing a cup carved out of a ruby from Serendib to the caliph of his hometown. This literary character is captured by the Old Man (*) of the Sea after stealing the enormous egg of a Roc and trying to bring it home to Baghdad. For ten points, name this character from *One Thousand and One Nights*, a sailor who goes on seven legendary voyages.**

ANSWER: **Sinbad** the Sailor (accept as-**Sindibadu** al-Bahriyy; accept **Sindbad**)

(bonus) This character saves another who encounters a leopard, a she-wolf, and a lion at the beginning of the work in which he appears. For ten points each,

* Name this poet who guides Dante through the underworld in a 14th-century epic.

ANSWER: **Virgil**

* The aforementioned rescue occurs in this first of the three parts of Dante's *Divine Comedy*, which is set in a realm with nine circles.

ANSWER: **Inferno**

* In the center of Hell, Dante encounters this Roman, who is partly responsible for the death of Julius Caesar. This man is described as having a "lean and hungry look" in a different play.

ANSWER: Cassius

(8) **One of the few rock 'n' roll aficionados of this instrument is Ian Anderson of Jethro Tull. A chromatic melody played on this solo instrument opens *Prelude to the Afternoon of a Faun*. Sasha the (*) Bird is represented by this instrument in Sergei Prokofiev's [[pro-KOH-fyeffs]] *Peter and the Wolf*. Jean-Pierre Rampal [[rahm-PAHL]], James Galway, and Frederick the Great all played, for ten points, what high-pitched woodwind instrument?**

ANSWER: Flutes

(bonus) This woman donated \$1 million to the development of the Moderna COVID-19 vaccine and replaced one of her famous refrains with the word "Vaccine." For ten points each,

* Name this country singer behind "Jolene" and "Coat of Many Colors."

ANSWER: Dolly Parton

* Parton was born and raised in this state and sang about her "Mountain Home" there. The Grand Ole Opry is a country music venue in this state's largest city.

ANSWER: Tennessee

* This other country music singer collaborated with Parton on a recording of "Islands in the Stream." He is also known for his own songs including "Coward of the County" and "The Gambler."

ANSWER: Kenny Rogers

Halftime

The categories are:

1. Classic British Literature
2. War of 1812
3. Proteins

Classic British Literature

Name the British writer who...

- (1) Wrote *The Hobbit* due to his interest in myth and legend.

ANSWER: J. R. R. **Tolkien** (accept John Ronald Reuel **Tolkien**)

- (2) Wrote *Rites of Passage* and *Lord of the Flies*.

ANSWER: William **Golding**

- (3) Was born Eric Arthur Blair in India and coined terms including "doublethink" and "Big Brother."

ANSWER: George **Orwell**

- (4) Witnessed the Great Fire of London and wrote about a certain castaway who makes a friend named "Friday."

ANSWER: Daniel **Defoe**

- (5) Had her novels *Silas Marner* and *Middlemarch* published under a male pseudonym.

ANSWER: George **Eliot** (accept Mary Anne **Evans**)

- (6) Wrote *Howards End* and "The Celestial Omnibus."

ANSWER: E. M. **Forster** (accept Edward Morgan **Forster**)

- (7)

ANSWER:

- (8)

ANSWER:

War of 1812

Name the...

- (1) Fourth U.S. president who also served during the War of 1812.

ANSWER: James **Madison**

- (2) Future president who led forces at the Battle of New Orleans.

ANSWER: Andrew **Jackson**

- (3) Practice employed by the Royal Navy to force U.S. sailors into service.

ANSWER: **Impressment**

- (4) Fort near Baltimore, the defense of which was the inspiration for the "Star-Spangled Banner."

ANSWER: Fort **McHenry**

- (5) Decisive battle won by William Henry Harrison which resulted in Tecumseh's death.

ANSWER: Battle of the **Thames** (accept Battle of **Moraviantown**)

- (6) City in which the dying Federalist Party hosted a convention which discussed New England's secession.

ANSWER: **Hartford** (accept **Hartford** Convention)

- (7)

ANSWER:

- (8)

ANSWER:

Proteins

What is the name of the...

- (1) Protein produced in the pancreas. Its deficiency is the cause of diabetes.

ANSWER: **Insulin**

- (2) Iron-containing protein found in red blood cells, allowing for the blood to transport oxygen.

ANSWER: **Hemoglobin**

- (3) Protein that makes the digestion of the sugar in milk and other dairy products possible.

ANSWER: **Lactase**

- (4) Most common protein in the human body, found most often in connective tissues. Its lack in older age leads to wrinkles.

ANSWER: **Collagen**

- (5) Protein found in saliva that begins digestion by breaking down starches into sugars.

ANSWER: **Amylase**

- (6) Proteins harmful when they "fold," the causative factor of Mad Cow Disease.

ANSWER: **Prions**

- (7)

ANSWER:

- (8)

ANSWER:

Second Half

(1) **The island of Thera was destroyed in a disaster named for these people. These people originally wrote in a script found on the Phaistos [[FEH-stohss]] Disk before switching to the Linear A syllabary. Arthur Evans, who (*) rediscovered this civilization, named these people after seeing a Knossos [[kuh-NAH-suss]] fresco of humans leaping a charging bull. For ten points, name this Bronze Age civilization from Crete, which was named after a mythical king who had a labyrinth constructed to house a half-man, half-bull.**

ANSWER: **Minoans** (prompt on "Minos"; prompt on "Minotaur")

(bonus) The Kopkamtib [[kohp-KAHM-teeb]] was used by this man to suppress opposition as part of his New Order regime. For ten points each,

* Name this second president of a southeast Asian country who ruled from 1967 to 1998. His ardently anti-communist government jailed Megawati Sukarnoputri [[soo-kar-noh-POO-tree]].

ANSWER: **Suharto**

* Suharto was president of this nation, in which he was born on the island of Java.

ANSWER: Republic of **Indonesia** (Republik **Indonesia**)

* During Suharto's regime, Indonesia invaded this tiny nation on a shared island. This nation became the first official new sovereign state of the 21st century in 2002.

ANSWER: Democratic Republic of **Timor-Leste** (accept **East Timor**; or Republica Democratica de **Timor-Leste**; or Republika Demokratika **Timor Lorosa'e**)

(2) **In one myth, Ambri and Assi ask this god to help them defeat the Winnili under Gambara. In the *Nine Herbs Charm*, this god killed a serpent using nine "glory twigs." In the Old English Rune Poem, the word "Os," or mouth, relates to this deity. This god carries around (*) Mimir's head after the Aesir-Vanir War. The ravens Hugin and Munin belong to, for ten points, what Norse god and "All-Father," who was associated with war, victory, and wisdom?**

ANSWER: **Odin** (accept **Woden**; accept **Wutan**; accept **Wotan**; accept **Wodanaz**; accept **Godan**)

(bonus) A member of the Pleiades [[PLEE-uh-dees]] named Maia [[MY-ah]] was the mother of this deity, whose Roman equivalent was Mercury. For ten points each,

* Name this Greek messenger god who held domain over travelers.

ANSWER: **Hermes**

* From the Greek for "herald's wand," this staff wielded by Hermes is often depicted with two serpents coiled around it and a pair of wings at the head.

ANSWER: **Caduceus** [[kuh-DOO-see-us]] (accept **Kerukeion**)

* Another messenger in Greek mythology was this twin of the Titaness Arke [[AR-kay]], who personified the rainbow.

ANSWER: **Iris**

(3) **The change in this quantity is proportional to molality times the cryoscopic constant. A mixture's lowest possible value for this quantity occurs at the eutectic point. A substance's physical change at this temperature is described by the (*)** enthalpy of fusion. Adding salt to a solution "depresses" this quantity, which is a colligative property. For ten points, name this temperature at which a solid turns into a liquid.

ANSWER: **Melting Point** (accept **Freezing Point**; accept **Melting Temperature**; accept **Freezing Temperature**; accept **Liquefaction Point**; accept **Crystallization Point**)

(bonus) A solution of this metal's trioxide in sulfuric acid constitutes the Jones reagent [[ree-AY-jent]]. For ten points each,

* Identify this transition metal named for its ability to change the color of many metal compounds.

ANSWER: **Chromium** (accept **Cr** [{"C"}-{"R"}])

* The Jones reagent distinguishes primary and secondary from tertiary [[TER-shee-ay-ree]] examples of these organic compounds, which possess a hydroxyl or "OH" functional group bound to a saturated Carbon atom.

ANSWER: **Alcohols**

* The Jones test on alcohols works by this type of reaction, in which a chemical species loses electrons.

ANSWER: **Oxidation** (accept **Oxidizing**; prompt on "redox")

(4) **One archaeological site on this island is the Mound of Mercenary Women. A pseudo-history says that the final race to settle this island were the Milesians. British Israelites led by Edward Wheeler Bird vandalized an archaeological site on this island. Five ancient (*) Slighe** [[SHLEE]] highways meet on this island at Tara Hill, former center of the Kingdom of Meath. High Kings ruled, for ten points, what island, now governed from Dublin?

ANSWER: **Ireland** (accept **Éire**; accept **Airlann**; prompt on "Meath")

(bonus) One test of this phenomenon involved an individual dressed as a gorilla moving through a group that is passing a basketball. For ten points each,

* Name this faculty whose deficit is often associated with hyperactivity in a certain neurodevelopmental disorder.

ANSWER: **Attention** (accept **Attention** deficit hyperactivity disorder; prompt on "ADD" or "ADHD")

* A 1972 experiment involving attention and delayed gratification had children receiving either a pretzel or one of these food items if they successfully waited for fifteen minutes without taking a reward.

ANSWER: **Marshmallows** (accept but do not reveal Stanford **Marshmallow** Experiment)

* The aforementioned Marshmallow Experiment was conducted at this university, which was also the site of a controversial prison experiment run by Philip Zimbardo.

ANSWER: Leland **Stanford**, Jr. University (accept **Stanford** Prison Experiment)

(5) **During this conflict, an army of Bohemians was defeated by forces led by Maximilian of Bavaria and Count von Tilly at the Battle of White Mountain. Albrecht von Wallenstein's [[VAH-len-shtines]] forces killed Gustavus (*) Adolphus at this conflict's Battle of Lützen [[LOOH-tzen]]. This war ended with the Peace of Westphalia and began with the Second Defenestration of Prague. For ten points, name this war fought between Catholic and Protestant European states which lasted from 1618 to 1648.**

ANSWER: **Thirty Years'** War (accept Battle of **White Mountain** before mentioned; anti-prompt on "Bohemian Revolt" before "Gustavus")

(bonus) In this city, Francesco I's marriage to Filippo Maria Visconti signaled the rise of its Sforza family. For ten points each,

* Name this Italian city in Lombardy.

ANSWER: **Milano**

* During the Italian Wars, Milan asked for the assistance of the army of a French king by this name. The first French king of this name was known as "the Great."

ANSWER: **Charles** (accept **Charles** VIII; accept **Charles** I; accept **Charles** the Great; accept **Charlemagne**)

* Francesco Sforza of Milan is mentioned in this early work of political philosophy, which claims that Cesare Borgia [[CHEH-sah-reh BOHR-zhah]] was a lucky example of the title figure.

ANSWER: *The **Prince*** (accept *Il **Principe***; accept *De **Principatibus***)

(6) **This movement was kick-started by a painting that depicted a bowl of fruit and five nude women, two wearing African masks. Painters from this movement sought to present their subjects as seen from several points (*) of view at once.** In some works from this movement, foreign objects like sand could be applied to canvas along with paint. For ten points, what artistic movement, which included Juan Gris [[GREESS]] and George Braque [[BRAHK]], broke subjects into geometric fragments?

ANSWER: **Cubism** (accept **Cubists**; prompt on "Orphism")

(bonus) This man's depictions of *The Kiss* and *The Three Shades* were originally intended to be part of his massive Dante-inspired sculpture *The Gates of Hell*. For ten points each,

* Name this French sculptor of *The Burghers of Calais* [[kuh-LAY]].

ANSWER: Auguste **Rodin** [[roh-DAH]]

* This Rodin sculpture of a man pensively resting his chin on his fist was also intended to be part of *The Gates of Hell*.

ANSWER: The **Thinker** (accept Le **Penseur**)

* This mistress and collaborator of Rodin became an accomplished sculptor in her own right, creating *The Waltz*. She depicted three people representing the stages of life in *The Mature Age*.

ANSWER: Camille **Claudé**

(7) **The first scientific measure of these phenomena was the Sieberg-Ambraseys [[am-BRAH-sayss]] scale. The UN developed an international early warning program in response to one of these phenomena in 2004. The negative peaks of these phenomena cause (*) shore drawback, while the positive peaks increase in height through wave shoaling in shallow water.** For ten points, name these disastrous phenomena, typically caused by tectonic activity displacing large volumes of water.

ANSWER: **Tsunamis** (prompt on answers including "wave" such as "Tidal Wave(s)" or "Seismic Sea Wave(s)")

(bonus) The AMBRE Project searched for solar siblings, or stars formed in the same cluster as the Sun, by measuring the abundance ratio of this heavy element to hydrogen. For ten points each,

* Name this metal with symbol Fe [{"F"}-{"E"}], the heaviest element formed by fusion within supergiant stars.

ANSWER: **Iron** (accept **Ferrum**)

* Iron is the sixth-most abundant element in the galaxy because its 56 isotope is produced in the One-A type of these stellar explosions.

ANSWER: **Supernovas** (accept **Supernovae**)

* In August 2022, NASA will launch this mission to study a namesake iron-nickel asteroid which may once have been the core of a rocky planet.

ANSWER: **Psyche** [[SAI-kee]] Mission (accept **Discovery Fourteen**; accept 16 **Psyche**)

(8) **This author wrote about how "From childhood's hour I have not been / As others were" in his poem "Alone." The speaker of another poem by this author recalls "dreaming dreams no mortal ever dared to dream before." The title subject of a poem by this author sits (*) "Perched upon a bust of Pallas just above my chamber door" and repeats the puzzling word "Nevermore." For ten points, name this author who wrote about being visited by a supernatural bird in "The Raven."**

ANSWER: Edgar Allan **Poe**

(bonus) One character in this work expresses a desire to be "living off the fatta' the lan'." For ten points each,

* Name this novella which features characters like a boxer named Curley and a mule driver named Slim. Its central characters are two ranch workers.

ANSWER: ***Of Mice and Men***

* *Of Mice and Men* was written by this author.

ANSWER: John **Steinbeck**

* This California valley serves as the setting for *Of Mice and Men* and many of Steinbeck's other works, including *East of Eden*.

ANSWER: **Salinas** Valley

Extra Questions

(1) **Carpo was one of the Horae [[HOR-ee]] who guarded the entrance to this location. Ganymede [[GAH-nee-meed]] serves as a cup-bearer to the chief figure of this location. Bellerophon [[beh-LEH-roh-fahn]] attempted to enter this location, but before he could reach it, his horse (*) Pegasus was stung by a gadfly, causing him to fall off. This location's inhabitants consumed ambrosia and nectar, and it is accessed via gates made of clouds. For ten points, name this mountain home of the Greek gods, which was ruled by Zeus.**

ANSWER: Mount **Olympus**

(bonus) In classic mechanics, all forces are applied in straight lines but not everything moves in a straight line. For ten points each,

* Identify the force that causes the curved path of motion by pulling the object inward, away from its intended straight line.

ANSWER: **Centripetal** Force

* To determine the centripetal force acting on an object, the radius of motion must be determined. These two other quantities must be determined to find the centripetal force.

ANSWER: **Mass** and **Velocity** (accept **Speed** in place of "velocity")

* Centripetal force was described as "a force by which bodies are drawn...towards a point as to a centre" by this English physicist known for developing three laws of motion.

ANSWER: Isaac **Newton**