

Round 8

First Half

(1) **Colostrum is the “first” produced of this substance, which passes antibodies and lymphocytes between individuals in passive immunity. It also contains lysozymes to kill bacteria. In a positive feedback loop, oxytocin promotes production of this liquid in the (*) mammary glands.** Emperor penguins, flamingos, and pigeons are the only birds that produce a form of this liquid, which contains casein, whey, and lactose. For ten points, name this pale liquid that is food for infant mammals.

ANSWER: milk

(1) Answer the following about electromagnetic radiation for ten points each.

This type of wave is used in crystallography to view biological molecules and in doctors' offices to view bones.

ANSWER: X-rays

This type of wave makes up the cosmic background radiation.

ANSWER: microwave

This wave has the highest frequency on the EM spectrum and is released in nuclear decay.

ANSWER: gamma rays

(2) **This author wrote about a house that continues to automatically prepare food and self-clean until it burns down in the short story “There Will Come Soft Rains”. Mr. Cooger and Mr. Dark run a carnival in Illinois in this author’s novel (*) *Something Wicked This Way Comes*.** A “mechanical hound” chases the protagonist of another of this author’s novels. For ten points, name this science fiction author of *The Martian Chronicles* who wrote about the “fireman” Guy Montag in *Fahrenheit 451*.

ANSWER: Ray Bradbury

(2) Answer some questions about everybody’s favorite British novelist born in Japan, Kazuo Ishiguro. For ten points each,

Kazuo Ishiguro’s most famous novel *The Remains of the Day* takes place during this war. The various guests who visit an English lord’s country house include Winston Churchill and David Lloyd George.

ANSWER: World War 2 (or Second World War)

In Ishiguro’s most recent novel, he wrote about a buried one of these imaginary beings. Two of these mythical creatures created by Rabelais [Rab-uh-ley] are Gargantua and Pantagruel

ANSWER: giants

Another novel by Ishiguro is *Never Let Me Go*. In *Never Let Me Go*, Miss Lucy has this profession. Miss Caroline has this profession in *To Kill a Mockingbird*

ANSWER: school teacher

(3) **The Pilgrimage of Grace** was led against this monarch after he dissolved the monasteries, an action that was overseen by Thomas Cromwell. This man passed the first Act of Supremacy, and Thomas Wolsey was executed after he failed to arrange an (*) annulment of this man's first marriage, leading him to divorce Catherine of Aragon and marry Anne Boleyn. For ten points, name this Tudor monarch who founded the Church of England and had six wives, two of which were beheaded.

ANSWER: Henry VIII [the Eighth]

(3) In 2016, this name won an Internet poll but was rejected in favor of a name honoring an English naturalist and narrator. For ten points each,

Give this proposed, but rejected name for a new British research ship. You can give the first or last name, which was instead used for a submarine stored on the boat.

ANSWER: RRS Boaty McBoatface (accept either or both)

This naturalist, the narrator of *Life on Earth*, was chosen instead of Boaty McBoatface as the namesake of the new ship.

ANSWER: Sir David Attenborough

The RRS *Sir David Attenborough* will replace the retiring RRS *James Clark Ross* and RRS *Ernest Shackleton* in its study of this continent.

ANSWER: Antarctica

(4) **This singer wrote about “sailors fighting in the dance hall” in a song on the album *Hunky Dory*. This man, who starred as Jareth the Goblin King in the 1986 film *Labyrinth*, released the song “Lazarus” and the album *Blackstar* in 2016. The transmission (*) “Major Tom to Ground Control” is heard in “Space Oddity” by, for ten points, what British rocker who created the character Ziggy Stardust and passed away in January 2016?**

ANSWER: David Bowie (or David Robert Jones)

(4) In the climax of this film, its title character takes on Obadiah Stane on the roof of Stark Industries. For ten points each,

Name this 2008 film, the first of a series, in which Robert Downey Jr. plays a weapons magnate and future Avenger who builds a powered exoskeleton in a cave with a box of scraps.

ANSWER: Iron Man

Iron Man was the first film of the “cinematic universe” of this comic book company, which was purchased by Disney in 2009.

ANSWER: Marvel Comics (or Marvel Studios; accept MCU or Marvel Cinematic Universe)

This talking computer, named for Tony Stark's manservant in the comic book series, is Stark's personal assistant. It is infiltrated by Ultron and used to attack the Avengers in a later film.

ANSWER: J.A.R.V.I.S. (or Just A Rather Very Intelligent System)

(5) **In a novel by J.M. Coetzee, Susan Barton lands on an island inhabited by this man, who escapes slavery with Xury. This man uses gunpowder to scare away 300 wolves, teaches Poll to ask “how came you here,” and saves a Spaniard from (*) cannibals after landing on an island near South America. For ten points, name this character, inspired by the explorer Alexander Selkirk, who rescues Friday in a namesake novel by Daniel Defoe.**

ANSWER: Robinson Crusoe (accept either underlined name)

(5) Answer some questions about *The Rubaiyat* for ten points each.

The Rubaiyat is attributed to this Persian mathematician and poet.

ANSWER: Omar Khayyám

The word *Rubaiyat* roughly translates to this English term for a poetic stanza made up of four lines, often with alternating rhymes.

ANSWER: quatrains

The Rubaiyat consists of 51 quatrains, one of which describes a “Moving Finger” performing this action, and after doing so, moving on.

ANSWER: writes (accept word forms)

(6) **One unsolvable ancient Greek problem was to make one of these shapes with twice the volume of a given one. This dual of the octahedron is the only Platonic solid that can be used to tile space. In this shape, (*) three faces meet at each of its eight vertices. Its volume can be computed as side length to the third power. For ten points, name this three-dimensional shape with six square faces.**

ANSWER: cube

(6) Identify the following about factorization for ten points each.

All positive integers can be factorized into these numbers. Composite integers can be factored into two or more of this type of factor.

ANSWER: prime numbers

This value for A and B is the largest number that A and B are both multiples of. Factorizing both numbers and multiplying the shared primes is one way to compute this value.

ANSWER: greatest common divisor or greatest common factor (or gcd or gcf)

When factorizing a number, one often creates this type of structure in which under each composite number N are written two numbers multiplying to N. The original number appears at the top of this structure, which becomes wider toward the bottom.

ANSWER: factor tree

(7) **The founder of this ancient empire defeated his grandfather Astyages, recorded the crimes of Nabonidus on a clay cylinder, and founded a capital city at Pasargadae. Another ruler of this empire sat on a throne, watching his fleet lose the Battle of Salamis, sealing defeat in a 480 (*) BC war. This empire was led in that war in ancient Greece by Xerxes, the son of Darius. For ten points, name this ancient empire founded by Cyrus the Great in what is now Iran.**

ANSWER: Persian Empire (or Achaemenid Empire)

(7) This son of Pepin the Short led a 782 AD massacre of non-Christians at Verden. For ten points each, Name this first Holy Roman Emperor, who was crowned on Christmas Day in 800.

ANSWER: Charlemagne (or Carolus Magnus or Charles the Great or Karl der Grosse)

Charlemagne conquered these Germanic people in Italy by completing a 774 siege of Pavia. These people had been led by Desiderius.

ANSWER: Lombards

The third Pope of this name crowned Charlemagne. In 1520, the tenth Pope of this name, which translates to "Lion," issued *Exsurge Domine*, excommunicating Martin Luther.

ANSWER: Leo

Sixty Second Rounds

The categories are . . .

1. Arguments in Essays
2. Athens
3. Jupiter
4. European Composers

ARGUMENTS IN ESSAYS

Who argued that...

(1) Individuals should stand up against government when it betrays their conscience in his essay "Civil Disobedience?"

ANSWER: Henry David Thoreau

(2) Individuals should avoid conformity in his essay "Self-Reliance?"

ANSWER: Ralph Waldo Emerson

(3) The colonies of America should fight for a more representative government in the pamphlet *Common Sense*?

ANSWER: Thomas Paine

(4) Taxation was not tyranny in one pamphlet and compiled a Dictionary of the English Language?

ANSWER: Samuel Johnson

(5) Through Imperialism both the conqueror and conquered are destroyed in his essay "Shooting an Elephant?"

ANSWER: George Orwell (or Eric Arthur Blair)

(6) Solitude is responsible for the Mexican perspective on death and identity in his book-length essay *The Labyrinth of Solitude*?

ANSWER: Octavio Paz

ATHENS

Athens is or was...

(1) The capital of what modern nation?

ANSWER: Greece (or Hellas)

(2) The rival of what militaristic city-state, which it fought against in the Peloponnesian War?

ANSWER: Sparta (accept Lacedaemon)

(3) Home to what prominent temple to Athena that contained the Elgin Marbles?

ANSWER: Parthenon

(4) Home to what hill in the center of the city that contained that temple?

ANSWER: Acropolis

(5) Led by what statesman who built the temples on that hill and gave a famous funeral oration during the Peloponnesian War?

ANSWER: Pericles

(6) The sponsor of a 415 BC military expedition to Syracuse on what now-Italian island?

ANSWER: Sicily (accept Sicilian Expedition)

JUPITER

Considering the planet Jupiter, name the...

(1) Large ringed planet that is the next farthest from the Sun after Jupiter.

ANSWER: Saturn

(2) Massive, centuries-old storm in Jupiter's southern hemisphere which is, currently, not actually its named color.

ANSWER: Great Red Spot

(3) Italian scientist who discovered Jupiter's four largest moons using an early telescope.

ANSWER: Galileo Galilei (accept either or both names)

(4) Moon, Jupiter's fourth largest, that may harbor life in its subsurface ocean.

ANSWER: Europa

(5) Element that makes up the majority of Jupiter's atmosphere and the majority of the Sun.

ANSWER: Hydrogen (or H)

(6) Comet that broke apart and crashed into Jupiter in 1994.

ANSWER: Shoemaker-Levy 9 (prompt on partial answers)

EUROPEAN COMPOSERS

Which composer wrote the music for the...

(1) *Academic Festival Overture* and a famous lullaby?

ANSWER: Johannes Brahms

(2) Minute Waltz for piano?

ANSWER: Frederic Chopin

(3) *Peer Gynt*, including “In the Hall of the Mountain King?”

ANSWER: Edvard Grieg

(4) *Pomp and Circumstance* marches, as heard at many graduations?

ANSWER: Sir Edward Elgar

(5) “Anvil Chorus” from his opera, *il Trovatore* [troh-vah-TORE-ay]?

ANSWER: Giuseppe Verdi

(6) Lieder [lee-der] “Der Erlkonig” and “Gretchen at the Spinning Wheel”?

ANSWER: Franz Schubert

Second Half

(8) **This man argued that existence precedes essence, noting that man “surges up in the world, and defines himself afterwards” in an essay arguing his philosophical position “is a Humanism.” This lover of Simone de Beauvoir declined the 1964 (*) Nobel Prize in Literature, earned for novels like *Nausea*. For ten points, name this French existentialist philosopher, the author of *Being and Nothingness* and *No Exit*.**

ANSWER: Jean-Paul Sartre

(8) The tomb of Suleiman Shah is part of a small Turkish gravesite within this country, guarded by a few dozen Turkish soldiers as this country’s civil war rages on. For ten points each,

Name this Middle Eastern country. Most refugees from this country’s civil war cross into bordering Turkey.

ANSWER: Syria

This Syrian leader’s 2011 crackdown on Arab Spring protests led to the start of his nation’s civil war.

ANSWER: Bashar al-Assad

This current President of Turkey has been criticized for financially supporting ISIS in fighting in Syria.

ANSWER: Recep Tayyip Erdogan [air-doh-wan, but be lenient]

(9) **In a play by this man, Irina Arkadina’s son writes a play performed by Nina, and Konstantin Treplev shoots the title bird. The “eternal student” Trofimov appears in another play by this author of *Three Sisters*. He wrote about Lopakhin purchasing the title grove of (*) trees from Madame Ranevskaya, whose family leaves as the sound of an axe is heard. For ten points, name this Russian playwright of *The Seagull* and *The Cherry Orchard*.**

ANSWER: Anton Pavlovich Chekhov

(9) In a short story about the American west, Cherokee Sal's son is given this name by the gambler Oakhurst. For ten points each,

Give this name, awarded because the child brought good fortune to Roaring Camp.

ANSWER: Thomas "Tommy" Luck

"The Luck of Roaring Camp" is a short story by this author, who wrote about Oakhurst's death in another short story about a group of Outcasts.

ANSWER: (Francis) Bret Harte

Oakhurst dies in a Bret Harte short story titled for a town called "this game" Flat. Oakhurst is a professional player of this game, and is targeted by a gang of reformists for gambling at this card game.

ANSWER: poker

(10) **When this value is high for a gas, the van der Waals equation must be substituted for the ideal gas equation because of the high mass concentration. Because thermal expansion changes the volume, changes in temperature can change this intensive property. Specific (*) gravity is this property measured against a standard like water, whose value for this is 1 gram per milliliter at 40 degrees Celsius. For ten points, name this property, equal to an object's mass divided by its volume.**

ANSWER: density

(10) These structures may be thousands of parsecs across, but are gravitationally bound a center of mass. For ten points each,

Name these collections of stars, examples of which include the Milky Way.

ANSWER: galaxy

The Milky Way is this type of galaxy, whose rotation has created two or more arms snaking from the central bulge.

ANSWER: spiral galaxy (accept barred spiral galaxy)

This American astronomer organized different galaxy types in a "tuning fork" diagram, showing elliptical galaxies on the left and two types of spiral galaxies on the right.

ANSWER: Edwin Hubble

(11) **A dismembered soldier appears at the bottom of this painting with a flower growing out of a shattered sword. A light bulb in the shape of an eye at the top of this painting appears to explode over an (*) impaled horse in this painting. A bull stands over a woman cradling her dead child in this painting of the destruction of a Basque town. For ten points, name this mural-sized painting that decries the Spanish Civil War, created by Pablo Picasso.**

ANSWER: Guernica

(11) The fifth of these works has a phenomenally challenging harpsichord cadenza. For ten points each, Name this set of six concertos, written for the Margrave Christian Ludwig in 1721.

ANSWER: Brandenburg Concertos

This German composer not only wrote the Brandenburgs, but played the challenging harpsichord part in Brandenburg No. 5.

ANSWER: Johann Sebastian Bach

In addition to harpsichord and violin, Brandenburg No. 5 includes a solo part for this woodwind instrument, a larger relative of the piccolo.

ANSWER: flute

(12) **While on Skyros, this man disguised himself as a woman but his ploy was revealed when he reached for a spear. This character returned to the Trojan war after the death of Patroclus, and his “wrath” is the subject of the first line of the (*) *Iliad*.** This man’s mother, Thetis, tried to make him immortal by dipping him into the river Styx, but failed to completely submerge him. For ten points, name this Greek hero whose only vulnerable part was his heel.

ANSWER: Achilles

(12) This man is believed to have abandoned his life of pleasure after seeing an old man, a diseased man, a corpse, and an ascetic. For ten points each,

Name this man whose teachings are the basis of a religion which follows the Eightfold Path in order to escape dukkha, or suffering.

ANSWER: Buddha (accept either name of Siddhartha Gautama, accept Shakyamuni Buddha)

The aspects of the eightfold way are often depicted on one of these objects known as the Dharmachakra, in which they serve as the spokes.

ANSWER: wheel

The end goal of Buddhism is to attain this state of liberation from the cycle of birth, life, and death.

ANSWER: nirvana

(13) **One speech by this man was inspired by Franklin Roosevelt’s Fala Speech and explained he’d be keeping a dog named Checkers. This man used “ping-pong diplomacy” and was the first US President to visit China. Despite the discovery of the “smoking gun” tape, this man declared that he “was not a (*) crook” and was later given a “full, free and absolute” pardon by his successor, Gerald Ford.** For ten points, name this US President who resigned following the Watergate Scandal.

ANSWER: Richard Milhous Nixon

(13) This man was known as Amenhotep IV until he converted to a new belief system based on the worship of the Sun disk. For ten points each,

Name this monotheistic pharaoh who was married to Nefertiti.

ANSWER: Akhenaten

Akhenaten was the father of this boy pharaoh, whose famous tomb was re-discovered in 1923.

ANSWER: (King) Tutankhamun (or (King) Tutankhaten)

Tut's tomb, like many others, was found in this region on the west banks of the Nile, on the opposite shores of Thebes.

ANSWER: Valley of the Kings

(14) **These animals can suffer from antennapedia, or legs forming where antennae should be. Some of these insects may have curly or vestigial wings. Only males of this species may have white compound eyes, derived from a recessive sex-linked trait, as discovered by (*) Thomas Hunt Morgan at Columbia.** For ten points, name this arthropod model organism used in inheritance studies, an insect named for its tendency to lay eggs in ripened produce.

ANSWER: fruit fly (or drosophila melanogaster; prompt on "fly")

(14) The first images and video footage of a living one of these organisms weren't made until the last decade, following centuries of questionable eyewitness accounts and beachings of their corpses. For ten points each,

Name these cephalopods which have two tentacles and eight arms and can grow up to 40 feet long, unlike their smaller brethren.

ANSWER: giant squid (prompt on squid; accept colossal squid)

Cephalopods, like squid, and gastropods, like snails, fall under this phylum of marine invertebrates. These organisms feature a mantle and a radula.

ANSWER: mollusca (or mollusks)

Giant squid are real; if they weren't, the search for them would be classified as this pseudoscience, the study of creatures for whom we have no evidence of their existence. Practitioners of this "study" look for Bigfoot or other cryptids.

ANSWER: cryptozoology

Extra Question

Only read if you need a backup or tiebreaker!

(15) **After Philip Fabricius survived an event in this city, he was given the title von Hohenfall. A period in this city attempted to spread "Socialism with a Human Face," which resulted in an invasion of this city by troops sent by the (*) Warsaw Pact.** Alexander Dubcek attempted to liberalize this city in a period known as its "Spring." An event in this Bohemian city sparked the Thirty Years War. For ten points, name this city where two defenestrations took place, the capital of the Czech Republic.

ANSWER: Prague