

Round 2

Brad Fischer • Charlotte Maher • Adam Silverman • Kristin Strey

Tossups

(1) **This novel contains an author self-insert in the character of Pierre Gringoire [gran-WAHR], who marries the daughter of Sister Gudule to avoid being killed in the Court of Miracles. In this novel, the protagonist, Captain (*) Phoebus [FEE-bus], and Archdeacon Claude Frolo all fall in love with a girl with whom the title man was switched as a child, the Romani dancer Esmeralda. For ten points, name this novel by Victor Hugo about Quasimodo, the bell-ringer of a Paris cathedral.**

ANSWER: The Hunchback of Notre Dame (accept Notre-Dame de Paris)

(2) **The release of energy in these events is described by elastic-rebound theory. These events are detected by triangulation of P and S waves. The modified Mercalli scale measures the (*) intensity of these events, unlike a logarithmic scale for their magnitude, which is named for Charles Richter. These events begin at an epicenter and can cause tsunamis. For ten points, name these natural disasters that are caused by rupturing faults in the crust.**

ANSWER: earthquakes

(3) **An 18th century trading post on this river became the city of Cape Girardeau. A sandbank in this river called Bloody Island became a dueling ground where Abraham Lincoln nearly fought a man with broadswords. (*) Monks Mound and the other mounds of the Native American city of Cahokia lie across this river from what is now St. Louis, near its confluence with the Missouri River. For ten points, name this river that flows from Minnesota to New Orleans, where it empties into the Gulf of Mexico.**

ANSWER: Mississippi River

(4) **A modern form of this religious practice, called vipassana, is based on the Satipatthana Sutta. During the zazen form of this practice, practitioners consider koans [koh-ahns]. This action was performed under (*) the Bodhi tree by a religious leader who is often sculpted doing this in lotus posture with his eyes closed. For ten points, name this “mindful” religious practice commonly performed in Buddhism, in which a person becomes focused and relaxed.**

ANSWER: meditation (accept word forms like meditate or meditating; prompt on “mindfulness” before it is read)

(5) **These machines were involved in a miraculous accident in Vaughan, Mississippi that killed only Casey Jones. In 1918 at Dutchman’s Curve, one hundred one people died when two of these vehicles collided because one failed to pull onto a (*) side track. John Henry legendarily beat a steel drill in a race to build a tunnel for these vehicles. Union Pacific and Central Pacific operated, for ten points, what vehicles that used the transcontinental railroad?**

ANSWER: trains (accept locomotives; accept steam trains)

(6) **The Intermediate Value Theorem requires one of these objects to be continuous on a closed interval, or else the result isn't guaranteed. The term "codomain" is often used interchangeably with (*) "range" to describe the set of output values of these objects. "G of x" or "F of x" are often used to indicate, for ten points, what mathematical objects that can be thought of as machines that, for an input value, return exactly one result?**

ANSWER: function

(7) **This region's rule by Empress Min in the late 19th century led a Western scholar to call it a "hermit kingdom." In 1598, the Ming Dynasty helped defend this region against an invading fleet at the Battle of Noryang. In the thirteenth century, this region's (*) Goryeo Dynasty fell to Kublai Khan, and its Joseon dynasty ended in 1897 with its invasion by Japan. For ten points, name this East Asian peninsula that is, today, split into two countries.**

ANSWER: Korea (accept Korean Peninsula; accept Koryo until "Goryeo" is read; accept North and South Korea only after "today" is read)

(8) **At the end of this novel, Hasbrouck is praised as a "whale," and Bill Smithers reports on shelling at a hospital. This novel's protagonist is called a "jimhickey" for leading a charge alongside Wilson, but still feels guilt for abandoning a (*) tattered soldier, and regrets the death of Jim Conklin. For ten points, name this novel by Stephen Crane in which Henry Fleming hopes to be injured to prove his bravery during the Civil War.**

ANSWER: The Red Badge of Courage

(9) **A bird transforms Prince Gvidon into this creature so that he can visit his father, Tsar Saltan, in a Russian opera. In a song named for this creature, Gvidon's journey is represented by chromatic runs of (*) sixteenth notes that are commonly performed too quickly by modern performers. Nikolai Rimsky-Korsakov wrote an interlude about the "Flight of," for ten points, what insect that is represented with chaotic music to indicate its buzzing?**

ANSWER: bumblebee (accept Flight of the Bumblebee)

(10) **The hierarchy problem asks why this force is so much weaker than the weak force. General relativity explains this force through the curvature of spacetime. On Earth's surface, the acceleration due to this force is about (*) 9.8 meters per second squared. Tides are caused by this force, which acts between any two objects with mass. "Big G" is a constant named for, for ten points, what force that attracts objects on Earth toward the ground?**

ANSWER: gravity (accept gravitational force)

(11) **This country is the home of Michael Ondaatje [Michael on-DAHT-yeh], the author of *The English Patient*, which won the Man Booker Prize. A short story writer from this country won the 2013 Nobel in Literature for works like *Lives of Girls and Women*. Alice (*) Munro is from this country, where L.M. Montgomery wrote a novel about a red-headed orphan who lives on Prince Edward Island. For ten points, name this home country of *Anne of Green Gables*, which is north of the United States.**

ANSWER: Canada

(12) **These characters were created by Kevin Eastman and Peter Laird, who founded Mirage Studios to produce comics about this group. In a 2022 reboot of thirteen 80s and 90s games about these characters, the player can fight (*) Tokka, Bebop and Rocksteady, or Krang while playing as Mikey or Raff. The *Cowabunga Collection* is about, for ten points, what group of four adolescent, shape-changed, fighting reptiles?**

ANSWER: Teenage Mutant Ninja Turtles (accept TMNT)

(13) **This figure advised that “all Men would be tyrants if they could” in an argument for women’s inclusion in political society. This woman notes that she will attempt to make saltpeter in a letter that also implores “Do not put such unlimited power into the hands of the (*) Husbands.” The “Remember the Ladies” letter was one of hundreds written between this woman and her husband, the only Federalist President. For ten points, name this First Lady to the second U.S. President.**

ANSWER: Abigail Adams (both underlined parts required; prompt on “Adams” alone)

(14) **Some scholars believe that this author may have been inspired by Cicero to use the lion and the fox in one of the rare metaphors in his work. This author expounded on his most famous ideas in a series of *Discourses on the ancient Roman political historian Livy*. The idea that it is better for a (*) ruler to be feared than loved is argued in this man’s most famous work, published in 1532. For ten points, name this 16th century Italian philosopher, the author of *The Prince*.**

ANSWER: Niccolo Machiavelli (accept Niccolo di Bernardo dei Machiavelli)

(15) **A eutectic mixture has a lower value for this quantity than its components. Tungsten is used in light bulb filaments because of its high value for this quantity. Unusually, the line named for this quantity has a positive slope on (*) water’s phase diagram; however, adding salt will “depress” it, making roads safer in the winter. Zero degrees Celsius is water’s value for, for ten points, what point at which a solid turns into a liquid?**

ANSWER: freezing point (accept melting point)

(16) **These religious leaders used the “Two Ladies Name,” a title that represented the unity of a snake and a vulture. One of these historical leaders tried to establish a monotheistic form of his religion in Amarna and changed his name to honor (*) Aten, only for his successor to restore the worship of gods like Wadjet, Horus, and Ra. For ten points, name this title held by Akhenaten and Tutankhamun, two of the earthly “Sons of Ra” who ruled ancient Egypt.**

ANSWER: pharaoh (accept king of Egypt; prompt on “king” alone)

(17) **This artist captured the attention of Georges Braque with a painting of five angular figures inspired by women in a brothel and by African masks, *Les (*) Demoiselles d’Avignon* [[lay day-mwah-zels da-VEE-nyawn]. This artist created a black-and-white painting of the bombing of a Basque city during the Spanish Civil War, and during his Blue Period, he painted *The Old Guitarist*. For ten points, name this Spanish painter who painted *Guernica* and co-founded Cubism.**

ANSWER: Pablo Picasso (accept Pablo Ruiz y Picasso)

(18) **Palisade cells are located on these structures, which in arid climates are often covered by wax to preserve water loss through transpiration. The stomata on these structures exchange (*) oxygen for carbon dioxide.** These structures are called fronds on ferns, and they are needle-like for conifer plants. For ten points, name these structures that are rich in chlorophyll, bud off from stems, and are the site of photosynthesis in plants.

ANSWER: leaves (accept leafs)

(19) **In this country, the far-right terrorist group Ordine Nuovo carried out the Piazza Fontana bombing, and the far-left Red Brigades kidnapped former PM Aldo Moro, during this country's Years of Lead [led]. Anti- (*) fascist newspapers like *Avanti!* were suppressed in this country by a dictator whose corpse was hung upside down.** For ten points, name this European country where "Il Duce" [eel DOO-chay], Benito Mussolini, took power after his Blackshirts marched on Rome.

ANSWER: Italy (accept Republic of Italy; accept Kingdom of Italy)

(20) **In a novel by this author, Robert Martin marries Harriet Smith despite the meddling of the title matchmaker, Miss Woodhouse. In another novel by this author, the owner of Pemberley estate claims that a woman is "not (*) handsome enough to tempt" him, but eventually proposes to her despite their initial dislike.** Elizabeth Bennett and Mr Darcy appear in a novel by, for ten points, what English author of "manners novels" like *Emma* and *Pride and Prejudice*?

ANSWER: Jane Austen

Bonuses

(1) Unpopular explanations for the origin of this astronomical body include the capture hypothesis. For ten points each,

Name this fifth-largest satellite in our Solar System; note that all four larger satellites are beyond the asteroid belt, and this body is not.

ANSWER: Earth's Moon (accept Luna)

The leading theory for the Moon's formation is that a hypothetical planet, given this name, collided with Earth over 4 billion years ago. The resulting debris combined together to form the Moon.

ANSWER: Theia

The far side of the Moon's surface is covered with craters, some of which created impact-driven volcanic activity on the near side of the Moon; that led to the creation of these dark basaltic plains. You can answer with the official Latin name or its English translation.

ANSWER: seas (accept lunar maria; accept lunar mare [mar-ay])

(2) Ulrich Zwingli and John Calvin rebelled against this denomination's ban on clerical marriages and the use of icons. For ten points each,

Name this Christian denomination, led by the Pope, that Protestants rebelled against during the Reformation.

ANSWER: Catholic (accept word forms like Catholicism; accept Roman Catholicism)

During the Reformation, this former Catholic friar posted *Ninety-Five Theses*, and ultimately founded a namesake Protestant denomination.

ANSWER: Martin Luther (accept Lutheranism)

Martin Luther's *Ninety-Five Theses* disputed the Catholic sale of these religious items. By purchasing these things, Catholics could buy freedom from some common sins.

ANSWER: indulgences (accept plenary indulgences)

(3) Antoine Gallard added a story about this man to a collection of middle eastern folk tales. For ten points each,

Name this man who enters a magic cave and finds an oil lamp containing a powerful genie who grants his wishes.

ANSWER: Aladdin (accept Ala ud-Din; accept Ala ad-Din)

Gallard added the story of Aladdin to this collection of folk tales that also contains the stories of Ali Babba and Sinbad the Sailor.

ANSWER: The Thousand and One Nights (accept One Thousand and One Nights; accept The Arabian Nights; accept The Thousand and One Arabian Nights or One Thousand and One Arabian Nights; accept The Arabian Nights' Entertainments; accept Les milles et une nuits)

In the frame story of the *Thousand and One Nights*, all of the folk tales are told to the ruler Shahryar by this woman, his wife, who uses the stories to capture her husband's attention and prevent her execution.

ANSWER: Scheherazade [sheh-heh-rah-zod]

(4) This style of music has a regular rhythm, primarily for the benefit of military bands playing it on the move. For ten points each,

Name this musical genre, exemplified by “The Washington Post” and “The Stars and Stripes Forever.”

ANSWER: military **march**

The aforementioned marches earned this American composer and instrument inventor the title of “the March King”.

ANSWER: John Philip **Sousa**

Another patriotic Sousa march is named for this symbolic item, which is kept in Independence National Historical Park in Philadelphia.

ANSWER: **Liberty Bell** (accept the **Liberty Bell** March)

(5) The Georgia Gold Rush provided additional impetus for this event, which was legally enabled by the Indian Removal Act of 1830. For ten points each,

Name this decades-long event in which tens of thousands of Native Americans were forcibly and brutally relocated from southern states to “Indian Territory”.

ANSWER: **Trail of Tears**

While this seventh US President is often blamed for the Trail of Tears, modern scholars note that forced relocation of Native Americans was the general goal of the US government long before and long after his two terms in office.

ANSWER: Andrew **Jackson**

Several decades later, the Indian Territory was admitted to the union as this US state, removing further sovereignty from its Native American population.

ANSWER: **Oklahoma**

(6) This novel’s title character is caught staring across a bay toward a home in East Egg. For ten points each,

Name this “Great American novel” in which Nick Carraway narrates the wild lifestyle of his neighbor in Jazz Age New York.

ANSWER: The **Great Gatsby**

In *The Great Gatsby*, Gatsby stares longingly toward the home of this East Egg woman. This woman, Nick’s cousin, embraces upper class frivolity when she hopes her daughter will be a “pretty little fool.”

ANSWER: **Daisy** Buchanan (accept Daisy **Buchanan**)

When Gatsby and Nick travel from West Egg to downtown New York for parties, they pass through the Valley of Ashes, where Nick is unnerved by the eyes on a billboard advertisement for what optometrist?

ANSWER: Dr. T. J. **Eckleberg**

(7) It's Morbin' time! Answer the following about *Morbius*, the (sarcasm) INCREDIBLY WELL-RECEIVED film that has 138% positive reviews on Rotten Tomatoes, for ten points each.

Morbius is based on a Marvel character known as the "Living" one of these common monsters that suck blood from their victims to survive.

ANSWER: vampire

This actor basically killed the "Morbin' time" meme by acknowledging it on Twitter. In addition to *Morbius*, this man made a nuisance of himself while playing Joker in *Suicide Squad*.

ANSWER: Jared Leto (accept Jared Joseph Leto)

Leto keeps making himself impossible to work with because of his approach to this acting style. This system of acting was created by Konstantin Stanislavski, and demands that actors stay in character both in and out of scenes.

ANSWER: Method acting (accept The Method)

(8) This physical force opposes the weight of an object submerged in a fluid. For ten points each,

Name this force. As an adjective, this term often describes objects that float, such as small floating weather research stations.

ANSWER: buoyant force (accept buoyancy; accept buoys; accept upthrust)

This ancient Greek thinker and inventor of a supposed death ray shouted "Eureka!" upon realizing that buoyancy was the key to finding the volume of irregularly shaped objects.

ANSWER: Archimedes of Syracuse

Archimedes developed a water pump consisting of this simple machine, which is really an inclined plane wrapped around a cylinder. As a crank is turned, this simple machine turns and carries water up between its threads.

ANSWER: screw (accept additional information, like water screw or screw pump)

(9) In September 2022, this country launched a surprise counter-attack to retake Kharkiv, causing Vladimir Putin to mobilize reservists. For ten points each,

Name this country that was invaded by Russia in February 2022.

ANSWER: Ukraine

This President of Ukraine and former actor gained international renown for his response to the Russian invasion.

ANSWER: Volodymyr Zelenskyy

The counter-offensive is pointed toward this coal-rich region of eastern Ukraine, whose separation was recognized by Russia in the lead-up to the war. You can answer with either of the two separatist oblasts, or with the geographic region that those oblasts comprise.

ANSWER: Donbass region (accept Donets Basin; accept Luhansk Oblast; accept Donetsk Oblast; accept Luhansk People's Republic; accept Donetsk People's Republic)

(10) This man asked permission to celebrate the Toxcatl [tosh-COT'II] festival, where Pedro de Alvarado's men committed a massacre on May 22, 1520. For ten points each,

Name this Aztec emperor, the last to effectively rule the empire before the Spanish conquest.

ANSWER: Montezuma II (accept Moctezuma II; accept Moctezuma Xocoyotzin)

Montezuma was killed in the Aztec capital of Tenochtitlan [ten-oak-teet-lan], whose ruins are now within this modern-day capital city.

ANSWER: Mexico City

Shortly after the death of Montezuma, Hernan Cortez ordered this secret escape from Tenochtitlan, in which hundreds of Spanish soldiers were killed.

ANSWER: La Noche Triste (accept the Night of Sorrows)

(11) The dragon Nidhogg lives in the roots of this tree, and sends the squirrel Ratatosk to run messages to an eagle at the top of it. For ten points each,

Name this "World Tree," a giant ash tree that links the nine realms in Norse myths.

ANSWER: Yggdrasil [IG-drah-zill]

This one of the nine realms, sometimes called "Middle Earth," is the realm inhabited by humans.

ANSWER: Midgard

Midgard is linked to the gods' realm, Asgard, by the Bifröst, a bridge in the form of one of these colorful phenomena in the sky.

ANSWER: rainbow

(12) Heron's formula calculates this value by taking the square root of the product of four different measurements, each of which has units of length. For ten points each,

Name this specific type of measurement. The most commonly used formula to find this quantity multiplies the length of a base, times the length of an altitude, times one-half.

ANSWER: area of a triangle (both underlined parts required; prompt on "area"; prompt on "size of a triangle")

By using a type of analysis named for this mathematical concept, you can show that Heron's formula must calculate some kind of area; after all, "the square root of length to the fourth power" must be "length to the second power." Quantities like area have a value of two for this concept, while volume has a value of three.

ANSWER: dimension (accept word forms like dimensional analysis)

As typically written, Heron's formula includes a variable s to indicate this measurement of the triangle. The lengths that are multiplied together in Heron's formula are this measurement, along with each side length subtracted from this measurement.

ANSWER: semiperimeter (accept equivalents like "half of the triangle's perimeter" or "the perimeter divided by 2"; prompt on answers that are equivalent to "a plus b plus c, all over 2" by asking the player "what is that called?")

(13) Schoolteacher Ichabod Crane moves to this village, where he hears the story of a spectral soldier searching for his head. For ten points each,

Name this east coast village where Ichabod encounters the Headless Horseman.

ANSWER: Sleepy Hollow (accept The Legend of Sleepy Hollow; prompt on “Greensburg;” prompt on “Tarry Town”)

The Legend of Sleepy Hollow is by this American author of the short stories “The Devil and Tom Walker” and “Rip Van Winkle.”

ANSWER: Washington Irving

Both “The Legend of Sleepy Hollow” and “Rip Van Winkle” appear in Irving’s short story collection *The Sketch Book of Geoffrey Crayon*, which claims the stories were recorded by this fictional Dutch historian.

ANSWER: Diedrich Knickerbocker

(14) Checkpoints in this process prevent spindle fibers from attaching to the centromeres unless DNA has been replicated properly. For ten points each,

Name this process of cell division that produces two daughter cells often contrasted with meiosis.

ANSWER: mitosis

Assuming the cell passes its checkpoint, the spindle fibers retract and sister chromatids are pulled to opposite poles of the cell, in this phase of mitosis that comes right after metaphase.

ANSWER: anaphase

The DNA replication checkpoint measures the lengths of these tips of the chromosomes, which get shorter over the course of multiple cell divisions. Most cells won’t divide once these disappear.

ANSWER: telomeres

(15) Leslie Groves of the U.S. Army Corps of Engineers led this effort, which culminated in the 1945 Trinity test. For ten points each,

Name this World War II-era “project” that developed the first nuclear bombs.

ANSWER: Manhattan Project

As head of the Los Alamos Laboratory, this scientist spearheaded the Manhattan Project. During the Trinity test of the first nuclear weapon, this man recalled a quote from Hindu scripture, “Now I am become Death, destroyer of worlds.”

ANSWER: J. Robert Oppenheimer (accept Julius Robert Oppenheimer)

Before building the lab at Los Alamos, the Manhattan Project seized land in Tennessee to build this laboratory, which remains an important nuclear research facility today.

ANSWER: Oak Ridge Laboratory (accept Oak Ridge National Laboratory)

(16) This playwright wrote about families separated by shipwrecks caused by storms in plays like *The Winter's Tale* and *Pericles, Prince of Tyre*. For ten points each,

Name this ultra-famous playwright of the Elizabethan era, who also included a shipwreck that separates twins Viola and Sebastian in his play *Twelfth Night*.

ANSWER: William Shakespeare

In this Shakespeare play, a storm separates a pair of twins both named Antipholus [an-TIH-foh-luss] and their servants, a pair of twins both named Dromio. Hilarity ensues.

ANSWER: The Comedy of Errors

This other Shakespeare play is named for a sea-storm summoned by Prospero, a sorcerer who wrecks Ferdinand's ship on the island where he lives with Miranda, Caliban, and Ariel.

ANSWER: The Tempest

(17) This man named his only son Georges [zhorz] Washington, in honor of his commander. For ten points each,

Name this Frenchman who assisted the Americans at the Battle of Yorktown. Thomas Jefferson later helped this member of the Estates General [eh-STAH zhen-ay-rall] write the *Declaration of the Rights of Man*.

ANSWER: Marquis de Lafayette (accept Marie-Joseph Paul Yves Roch Gilbert du Motier)

The Marquis de Lafayette was named in honor of an ancestor who fought against the English in this war, which lasted from 1337 to 1453.

ANSWER: Hundred Years' War

Lafayette's modern descendants include Philippe, the current king of this country. The Duchess of Brabant is in line to be this country's first queen.

ANSWER: Kingdom of Belgium

(18) Answer the following about the Italian Baroque [bah-ROHK] artist Artemisia Gentileschi [ahr-teh-MEE-see-ah JEN-tih-LES-kee], for ten points each.

After being assaulted in her father's studio, Artemisia frequently painted biblical scenes in which women, like Judith and Jael, do this to their enemies, Holofernes and Sisera.

ANSWER: killing them (accept synonyms like murder; accept descriptions like "driving a nail through the temple or beheading)

Like many of her contemporaries, Artemisia worked for years in this Italian city. Her painting *Judith Slaying Holofernes* is displayed in this city's Uffizi Gallery [oo-FEET-zee Gallery].

ANSWER: Florence (accept Firenze)

While in Florence, Artemisia was patronized by members of this powerful banking family founded by Cosimo.

ANSWER: Medici (accept House of Medici)

(19) In 2020, the first new deep mine for this commodity in England in 30 years was opened, even though the UK plans to close all of its power plants that run on this fuel by 2025. For ten points each,

Name this fossil fuel whose miners went on strike in the 1970s and 80s against pit closures in Yorkshire and Kent.

ANSWER: coal

The newest deep coal mine in England is in Cumbria. Cumbria and Northumberland are the two northernmost English counties and, thus, form England's border with this British constituent country.

ANSWER: Scotland

Striking was particularly strong in 1984 in this northern English historic county, by far the largest by area. This county inspired the names of several English colonial cities, including one that was absorbed into Toronto.

ANSWER: Yorkshire (accept County of York; accept City of York; accept Yorks)

(20) Give the following about group 15 of the periodic table, for ten points each.

The lightest element in group 15 is this most common gas in Earth's atmosphere. Its chemical symbol is N.

ANSWER: nitrogen

Two rows below nitrogen is this metalloid that is particularly poisonous to humans, a fact that users of some 19th century makeups or the pigment Emerald Green eventually learned.

ANSWER: arsenic (accept As)

The heaviest group 15 element, moscovium, was discovered by bombarding atoms of americium in one of these devices. A magnetic field confines the charged particles within this device as they reach incredible speeds.

ANSWER: particle accelerator (accept cyclotron; accept particle collider)