

Round 2

Tossups

(Tossup 1) On the eve of leaving office, this politician told his successor it was important to retain National Security Adviser Henry Kissinger. This man's first Vice President resigned after being accused of accepting bribes while Governor of Maryland. Spiro Agnew served under this man who was later pardoned by his second Vice President, Gerald Ford. For the point, name this President of the United States that resigned following the Watergate scandal.

ANSWER: Richard Nixon

(Tossup 2) This element is bonded to two cyclopentadienyl rings in the first discovered sandwich compound. This element is used to catalyze the formation of ammonia from nitrogen and hydrogen in the Haber-Bosch process. Along with nickel and cobalt, this element is naturally ferromagnetic. For the point, name this metallic element that is alloyed with carbon to form steel.

ANSWER: iron (accept Fe)

(Tossup 3) Injective functions may possess these things because they are one-to-one, thus passing the horizontal line test. For a function $f(x)$, [f of x] one of these entities is equivalent to flipping it over the line $y = x$ [y equals x]. A function with this relationship to $f(x)$ [f of x] is notated with a negative 1 as a supposed exponent on the f . The logarithm has this relationship to the exponential function. For the point, name this relationship of two functions that “reverse” each other.

ANSWER: inverse (accept word forms such as invert)

(Tossup 4) This work's third section includes the selections “The trumpet shall sound” and “I know that my Redeemer liveth.” King George II legendarily stood during this work, causing everyone in the audience to stand at the climactic end of this work's second section, which celebrates a “King of Kings” and “Lord of Lords.” For the point, name this oratorio by George Frederic Handel that contains the Hallelujah Chorus.

ANSWER: Messiah Oratorio

(Tossup 5) During mitosis and meiosis, this organelle self replicates. Along with chloroplasts, these organelles are believed to have originated from endosymbiosis. This organelle's inner membrane contains several folds called cristae. These organelles have their own genome, which is maternally inherited. For the point, name this organelle that synthesizes ATP, the powerhouse of the cell.

ANSWER: mitochondria (accept mitochondrion)

(Tossup 6) In one work, this philosopher argued that the psyche was the animating principle of humans. In another book, this philosopher defined humans as a “political animal.” In addition to *De Anima* and *Politics*, this thinker wrote a treatise on ethics named for his son, Nichodamus. For the point, name this Greek philosopher whose six books of logic are collected in the Organon, a student of Plato.

ANSWER: Aristotle

(Tossup 7) A poem by this author begins “midway through [his] life,” when he encounters an arch that reads “Abandon all hope, ye who enter here.” Beatrice sends the Roman author Virgil to guide a character created by this author through the nine circles of Hell. For the point, name this medieval author who used himself as the main character of his *Inferno*, the first part of this poet’s *Divine Comedy*.

ANSWER: Dante Alighieri (accept either name)

(Tossup 8) Gauss proved a theorem named for this term that relates two values for the Legendre symbol. That theorem is named for this term’s reciprocity. Nonreal solutions to equations named for this term with real coefficients must be conjugate. A formula named for this term is given by $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. For the point, name this term for polynomials with degree two.

ANSWER: quadratic (accept quadratic reciprocity; accept quadratic equation; accept quadratic formula)

(Tossup 9) The polyprotic type of these substances can donate multiple protons. The “magic” type of these substances contains antimony pentafluoride and is known for its ability to dissolve paraffin wax. Bronsted and Lowry defined these substances as proton donors and Lewis defined these substances as electron receptors. These substances have values under 7 for PH. For the point, name these opposites of bases.

ANSWER: acids

(Tossup 10) In a novel set in this country, a man uses his knowledge that a solar eclipse will occur in 528 to stave off his own execution. A character who lives in this country, Tom Canty, switches places with its leader but cannot produce this country’s great seal. Hank Morgan time travels to this country in a novel inspired by Arthurian myth. For the point, name this setting of Mark Twain’s novels *The Prince and the Pauper* and *A Connecticut Yankee in King Arthur’s Court*.

ANSWER: England (accept Great Britain or the United Kingdom)

(Tossup 11) This man established the Tolstoy Farm while working as a lawyer in South Africa. Lord Irwin signed a pact with this man, paving the way for the Second Round Table Talks. This man, who led the Salt March to Dandi, was assassinated by Nathuram Godse. The pacifist philosophy of Satyagraha was developed by, for the point, what nonviolent leader of the Indian Independence movement.

ANSWER: Mahatma Gandhi (accept Mohandas Gandhi)

(Tossup 12) This holiday, called Lebaran in Indonesia, begins with the sighting of the new moon on the first day of the month of Shawwal. Believers observe sawm prior to this holiday, and in the days leading up to it, donations of food ensure that the poor can also celebrate this holiday. For the point, name this Islamic feast that follows the long fast during the month of Ramadan.

ANSWER: Eid al-Fitr (prompt on “Eid;” do not accept or prompt on Eid al-Adha)

(Tossup 13) These objects can be visually represented using Carter-Penrose diagrams. These objects have been found to slowly “evaporate” via Hawking radiation. When neutron stars exceed the TOV limit, they can become these objects. The Schwarzschild radius sets the boundary of these objects’ event horizons. For the point, name these objects so massive that light cannot escape their gravitational pull.

ANSWER: black hole

(Tossup 14) A member of this family urged her husband to “remember the ladies” in a letter to the Continental Congress. Henry Clay was made Secretary of State by a member of this family after helping him win the Election of 1824. A Federalist member of this family served only one term as President after losing the Election of 1800 to rival Thomas Jefferson. For the point, name this family that included the Presidents John and John Quincy.

ANSWER: Adams

(Tossup 15) This country is divided into 101 departments, two of which are governed from the cities of Nancy and Dijon. Despite being in the Carribean, Guadeloupe and Martinique are considered overseas departments of this country. Haiti, Algeria, and much of Canada were once colonial holdings of, for the point, what European country led from Paris?

ANSWER: France

(Tossup 16) A 1948 photograph of this artist *Atomicus* shows him with three flying cats and splashing water. This artist depicted long legged horses and elephants in his *The Temptation of St. Anthony*. This artist also painted *Swans Reflecting Elephants*. This artist’s most famous painting shows soft, melting clocks. For the point, name this Spanish surrealist artist of *The Persistence of Memory*.

ANSWER: Salvador Dalí (or Salvador Domingo Felipe Jacinto Dalí i Domenech)

(Tossup 17) One of this author’s poems ends with the narrator saying “you’ll be a man, my son.” This author said “you’re a better man than I am” at the end of his poem “Gunga Din.” Characters in a work by this author include the tiger Shere Khan, Baloo the bear, and Mowgli, a human boy raised by wolves. For the point, name this British author of “If–” and *The Jungle Book*.

ANSWER: (Joseph) Rudyard Kipling

(Tossup 18) These dances could be performed in noho or luna styles, and their traditional kahiko form was performed at a heiau temple. Kahuna could wear ki leaves while performing these dances, which were banned after the arrival of Christian missionaries until King Kalakaua permitted these dances to be performed to honor gods like Laka and Pele. For the point, name this form of Polynesian religious dance popular in Hawaii.

ANSWER: hula (accept hula kahiko)

(Tossup 19) Bragg's law describes the diffraction of this phenomenon. This phenomenon was previously named Rontgen radiation. This form of radiation is used for a type of spectroscopy that first imaged protein structure. This form of radiation has wavelengths slightly longer than gamma rays. For the point, name this form of high energy electromagnetic radiation used to image bones.

ANSWER: x-rays

(Tossup 20) When this story's title character returns to his regular tavern, he notices a picture of George III has been replaced with one of George Washington. A loud noise in this story turns out to be a group of strangely-dressed men playing nine-pins. The title character isn't recognized by his dog Wolf after he takes a nap in the Catskills and wakes up twenty years later in, for the point, what short story by Washington Irving?

ANSWER: Rip Van Winkle

(Tossup 21) In this country, the FLQ kidnapped Pierre Laporte, triggering the October Crisis. William Lyon Mackenzie King led this country through World War II, during which German U-boats attacked ships in the St. Lawrence River. In 1995, a French-speaking province of this country held a referendum on whether or not to declare independence. Québec has considered leaving, for the point, what country led from Ottawa?

ANSWER: Canada

(Tossup 22) An incomplete one of these buildings is in Barcelona and was designed by Antoni Gaudi. One of these buildings in Paris was refurbished by Viollet-le-duc. One of these buildings in London was built by Sir Christopher Wren and is named for Saint Paul. Sagrada Familia and Notre Dame are examples of, for the point, what buildings used by Christians for worship?

ANSWER: churches (or cathedrals; or basilicas)

(Tossup 23) These features can be home to stone "soda straws" that pull water against gravity via capillary action. Along with sinkholes, these features often form in karst topography from dissolved limestone. When these features are formed by volcanoes, they are known as lava tubes. For the point, name these underground tunnels that contain stalagmites and stalactites.

ANSWER: caves

(Tossup 24) Jack Reed claimed that his proposal to use nuclear weapons on these events failed because it was "politically incorrect." One of these events in Galveston was the deadliest natural disaster in United States' history. A 2005 example of these events caused flooding from Lake Pontchartrain. For the point, name these natural disasters, one of which named Katrina devastated New Orleans.

ANSWER: hurricane (accept tropical cyclone; prompt on tropical storms)

(Tossup 25) A character in this novel draws criticism after walking three miles in the rain to visit her sister. In this novel, Mr Collins marries Charlotte after being rejected by her friend, and Mr Bingley eventually proposes to Jane. Lydia, Jane, Catherine, and Mary look for suitors while their sister, Elizabeth Bennet, overcomes her assumptions about Mr Darcy and marries him in, for the point, what novel by Jane Austen?

ANSWER: Pride and Prejudice

(Tossup 26) A party named for this event holds no seats in the UK parliament despite winning 2% of the vote in the 2019 election. That party is led by Nigel Farage who campaigned for this event. This event, which officially occurred January 31st, has complicated travel between Northern Ireland and Ireland. For the point, name this event in which the United Kingdom withdrew from a multinational organization.

ANSWER: the UK leaving the European Union (accept any answer about the United Kingdom, Britain, or Great Britain leaving the EU or European Union, accept Brexit (Party))

(Tossup 27) Rituals dedicated to this god at Abydos included honoring him as the Opener of the Ways at the place where his body legendarily floated out of the Nile. Part of this god became embedded in a djed column after he was cut into pieces by his brother Set. Horus was the son of this god and his sister-wife, Isis. For the point, name this green-skinned Egyptian god of the dead.

ANSWER: Osiris (accept Usir; accept Asur)

(Tossup 28) This city's Steinway Tower is known as the world's most slender skyscraper. This city is home to a David Childs' designed tower that stands 1,776 feet tall and was formerly known as Freedom Tower. In addition to One World Trade Center, this city is home to an art deco skyscraper that formerly served as the headquarters of Chrysler. For the point, name this city home to the Empire State Building.

ANSWER: New York City (accept NYC)

(Tossup 29) One of these creatures wins a game of riddles by asking the question "What have I got in my pocket?" Along with thirteen dwarves, one of these creatures rides in a set of barrels to Laketown when they escape from an Elven stronghold in Mirkwood. Some of these creatures live in holes in the ground in the Shire. For the point, name these creatures such as Bilbo Baggins, who is the protagonist of a J.R.R. Tolkien novel.

ANSWER: Hobbits (accept halfings)

(Tossup 30) This leader was imprisoned in Landsberg Prison after the failed Beer Hall Putsch. Despite warnings from his advisers, this leader broke the Molotov-Ribbentrop Pact, deciding to invade Joseph Stalin's Soviet Union. In his book *Mein Kampf*, this leader outlined his anti-Semitic policies that were later carried out by the SS. For the point, name this leader of Nazi Germany.

ANSWER: Adolf Hitler

Tiebreakers

(Tossup 31) A note and another note at double the frequency are separated by this interval. The standard flute and piccolo will have their music written in the same fashion, but the piccolo will sound higher by this interval. There are twelve half-steps in this interval, which separates the starting and ending notes of the major and minor scales. For the point, give this term for the interval between two notes of the same name, often denoted with an 8.

ANSWER: perfect octave

(Tossup 32) One of these events is preceded with warning to bring in all livestock and men or else they will die. In addition to raining fire and hailstorms, another of these events could be prevented by putting the blood of a lamb on the doorposts. That final one of these events resulted in the deaths of firstborn males. For the point, name these afflictions described in the book of Exodus.

ANSWER: 10 Plagues (accept any answer about plagues on Egypt)