

Round 1

Tossups

(Tossup 1) In *Drosophila*, Shaker channels control the release of this element. In the stomach, this element is exchanged with hydrogen in an ATP-dependent antiporter. Moving this element's ion out of a neuron causes hyperpolarization. This element is exchanged with sodium in a namesake active transport pump. For the point, name this element found in high amounts in bananas, which is symbolized K.

ANSWER: potassium (accept K before read)

(Tossup 2) A prophesy in this play comes true when an army uses tree branches from Birnam as camouflage in a battle at Dunsinane. A woman in this play imagines blood on her nightgown during a sleepwalking scene, causing her to fret, "Out, damned spot!" This play's title character meets the three witches, kills king Duncan, and is ultimately killed by MacDuff. For the point, name this Shakespeare play about a king of Scotland.

ANSWER: Macbeth

(Tossup 3) This term names a random variable given by a sum of independent Bernoulli variables. A theorem named for this term is used to expand expressions of the form [open parenthesis x plus y close parenthesis to the n]. That theorem uses coefficients in also named for this term given by the formula [n factorial over k factorial times n minus k factorial]. For the point, give this general name for an expression with two terms.

ANSWER: binomial (accept binomial distribution; accept binomial theorem; accept binomial coefficient)

(Tossup 4) In this country, the report *Bringing Them Home* investigated a government-sanctioned kidnapping program. This country established National Sorry Day in 1998 to remember the Stolen Generations. In 1985, this country returned ownership of Uluru back to its original owners. Aboriginals have a history of being mistreated in, for the point, what country led from Canberra, originally founded as a British penal colony?

ANSWER: Australia

(Tossup 5) A thinker from this country outlined his stream of consciousness theory of the mind in books like *The Principles of Psychology*. In a letter to the Danbury Baptist Association, a thinker from this country established the doctrine of separation of Church and State. Several thinkers in this country supported a strong government in The Federalist Papers. For the point, name this home country of Thomas Jefferson.

ANSWER: United States of America (accept either underlined term; accept USA)

(Tossup 6) An Icelandic pendant found in Foss adds a wolf's head to the top of this object, which was frequently inscribed with the cross after the Christianization of Scandinavia. This legendary object was created by the Brokkr and Sindri, a pair of dwarves who were distracted by a fly, resulting in this object having a short handle. For the point, name this Old Norse religious symbol owned by Thor.

ANSWER: Mjolnir (accept Thor's hammer; prompt on "hammer" until "Thor" is read and accept after)

(Tossup 7) This composer wrote drinking songs into his *Academic Festival Overture*. This creator of *Hungarian Dances* brusquely agreed with critics who described his first symphony as akin to "Beethoven's Tenth." The "Three B's" of classical music include Bach, Beethoven and, for the point, this man, known for his "Lullaby."

ANSWER: Johannes Brahms

(Tossup 8) This man's wife was impersonated during the Affair of the Diamond Necklace. In the Flight to Varennes, this ruler attempted to reach the royalist stronghold of Montmédy. This king was supported by finance minister Jacques Necker whose 1789 dismissal prompted the Storming of the Bastille. For the point, name this king, the husband of Marie Antoinette, who was executed during the French Revolution.

ANSWER: Louis XVI (prompt on Louis)

(Tossup 9) This politician served as the first adviser of the Consumer Financial Protection Bureau. In 2012, this woman defeated Scott Brown to claim the senate seat left vacant by Ted Kennedy. This woman has proposed an Ultra-Millionaire Tax as part of her 2020 campaign. For the point, name this Senator from Massachusetts who sought the Democratic nomination for President.

ANSWER: Elizabeth Warren

(Tossup 10) On Mars, these objects are destabilized by sublimating dry ice. Saltation and surface creep are two common processes that form these objects. Large collections of these objects are known as ergs. These objects can come in parabolic or crescent shapes. These objects are formed by winds and form steep angles on their slip sides. For the point, name these mounds of sand found in deserts and on beaches.

ANSWER: sand dunes

(Tossup 11) One of these animals kills the cat Tsarina in the novel *Mossflower*. These animals include the legendary warrior Martin and the young monk Matthias. One of these animals falls in love with Princess Pea and eventually convinces Roscuro to give up his evil ways with the promise of soup. For the point, name these protagonists of *Redwall* and *The Tale of Despereaux* who are often the rivals of rats.

ANSWER: mice (accept mouse)

(Tossup 12) This city's holy sites include the Well of Souls and the Foundation Stone. Those sites in this city are located under the Dome of the Rock, an important Islamic site located in this city. This city is home to the Western Wall, which is also known as the Wailing Wall and is the last remains of the second temple. For the point, name this city, the claimed capital of both Palestine and Israel.

ANSWER: Jerusalem

(Tossup 13) A charged particle is only affected by a magnetic field if the particle has a nonzero value for this quantity. The angular form of this quantity is measured in radians per second. Acceleration is the first derivative of this quantity with regards to time. Speed is the scalar form of, for the point, what vector quantity equal to the rate of change of position?

ANSWER: velocity (prompt on speed before it is read)

(Tossup 14) This religion requires Right Conduct and Right Intent as two parts of its Eightfold Path. This religion's founder was raised a prince and became an ascetic before teaching the Middle Way and the Four Noble Truths. This religion's primary denominations are Theravada and Mahayana. For the point, name this Indian religion founded by a namesake leader who meditated under the Bodhi tree to reach enlightenment..

ANSWER: Buddhism (accept word forms like Buddhist)

(Tossup 15) The location of this battle was referred to as "AF" in a code broken by Station HYPO. After receiving hasty repairs in the aftermath of the Battle of the Coral Sea, the *Yorktown* participated only to be sunk by *I-168* in this battle. During this battle, the Japanese Navy lost four aircraft carriers which had participated in the attack on Pearl Harbor just six months earlier. For the point, name this 1942 battle over a namesake atoll, the turning point of the Pacific Theater of World War II.

ANSWER: Battle of Midway

(Tossup 16) The narrator of this poem sits in his study when he feels "the air grew denser, perfumed from an unseen censer." This poem uses trochaic octameter, and opens, "Once upon a midnight dreary." The title creature of this poem perches upon a "pallid bust of Pallas," and repeatedly tells the narrator that he will see his "lost Lenore" "nevermore." For the point, name this poem by Edgar Allen Poe about an "ebony bird."

ANSWER: The Raven

(Tossup 17) One form of these events occurs after core-collapse and rebound. Another form of these events occurs when an object's mass exceeds the Chandrasekhar limit. That form of these events is known as Ia [one-A] and occurs with white dwarf stars that orbit larger stars. These events are the brightest observed features to be seen in the sky. For the point, name these events that occur when a star explodes.

ANSWER: supernova (accept type Ia [one-A] supernova; do not accept or prompt on just nova)

(Tossup 18) This artist painted a *Portrait of Gertrude Stein* and depicted Carlos Casemagas as a bearded street musician in *The Old Guitarist*, works completed during his Rose and Blue Periods. The bombing of a Basque city during the Spanish Civil War inspired this artist's most famous anti-war painting. For the point, name this cubist artist who painted Guernica.

ANSWER: Pablo Ruiz y Picasso

(Tossup 19) This literary character gives his friend an empty pot for his birthday after he unthinkingly eats its contents. This character invents a namesake game that involves dropping sticks on one side of a bridge and watching them come out on the other side. This character lives in the Hundred Acre Wood, and is friends with Piglet and Eeyore. For the point, name this stuffed bear, the best friend of Christopher Robin in stories and poems by A. A. Milne.

ANSWER: Winnie the Pooh (accept Winnie-ther-Pooh or Pooh-bear)

(Tossup 20) The southern border of this colony was expanded to St. Marys River by the Proclamation of 1763. In 1751, this colony lifted a ban on slavery that was originally in place due to concerns about border security. This colony was created, in part, to provide a buffer between Spanish Florida and Britain's American colonies. For the point, name this colony founded as a safe haven for debtors by James Oglethorpe, originally led from Savannah.

ANSWER: Georgia

(Tossup 21) A resolution to initiate this process is labeled "high privilege" by Jefferson's Manual. According to the Constitution, this process can be used in the event of "high crimes and misdemeanors." If this process is successful, a trial is then held in the Senate to determine whether or not to remove someone from office. For the point, name this process in which the House of Representatives brings charges against a civil officers, such as the President.

ANSWER: impeachment (do not accept or prompt on answers involving removal from office)

(Tossup 22) This element is extracted by binding it to cyanide in a process called "leaching." Rutherford fired alpha particles at a foil of this element to prove the existence of the nucleus. The mineral iron pyrite is sometimes called "fool's" this element due to their similar appearance. This metal is found directly below the similarly precious silver on the periodic table. For the point, name this precious metal with a yellow color.

ANSWER: gold (accept Au)

(Tossup 23) In a novel by this author, Conseil and Pierre Aronnax join an expedition aboard the *Nautilus*. In another book by this author, Passepartout helps Phileas Fogg win a bet by crossing the International Date Line before returning to Paris. For the point, name this French author of adventure novels like *Twenty Thousand Leagues Under the Sea* and *Around the World in Eighty Days*.

ANSWER: Jules Gabriel Verne

(Tossup 24) This country agreed to pay damages to France after losing the 1838 Pastry War. Napoleon III made Maximilian I emperor of this country. Forces from this country under the command of Ignacio Zaragoza defeated a much larger French army in a battle that took place on May 5th, 1862. For the point, name this country where the Battle of Puebla is commemorated on Cinco de Mayo.

ANSWER: Mexico

(Tossup 25) One player of this instrument pioneered Afro-Cuban jazz with the song “Manteca.” Another player of this instrument is known for his complex riffs on songs like “So What?”, which appear on the album *Kind of Blue*. Another player of this instrument sang the hit song “What a Wonderful World.” For the point, name this high pitched brass instrument played by Dizzy Gillespie, Miles Davis, and Louis Armstrong.

ANSWER: trumpet (prompt on horn)

(Tossup 26) During a riot in this city, Henry Raymond was forced to defend his newspaper office with a Gatling gun. Anger over a \$300 commutation fee led to the 1863 draft riots in this city. A riot broke out in this city in 1969 after police raided the Stonewall Inn in Greenwich Village. In 2011, protesters in this city occupied Wall Street. For the point, name this city where riots have frequently broken out in Manhattan.

ANSWER: New York City (accept NYC)

(Tossup 27) This poet wrote “Nature’s first green is gold” in his poem “Nothing Gold Can Stay.” In another poem, this man wrote “my apple trees will never get across and eat the cones under” nearby pine trees in a poem that claims “good fences make good neighbors.” “Two roads diverged in a yellow wood” in a poem by, for the point, what poet of “The Road Not Taken” and “Mending Wall?”

ANSWER: Robert Lee Frost

(Tossup 28) This state contains two cities, Wrangell and Sitka, which are both larger than Rhode Island by area. The Lynn Canal Highway is a proposed road to connect this state’s capital, which is currently not connected to any other US city, to an existing road network. Anchorage is the most populous city in, for the point, what largest state in the US which is led from Juneau.

ANSWER: Alaska

(Tossup 29) This Greek deity placed the hundred eyes of Argus into the feathers of the peacock, which was sacred to this deity. This deity engineered the death of Semele and cursed Leto not to be able to give birth on land in attempts to prevent the births of Dionysus, Apollo, and Artemis to this goddess’s husband. For the point, name this chief Greek goddess, the sister-wife of Zeus.

ANSWER: Hera

(Tossup 30) In *The Third Chimpanzee*, Jared Diamond observed that humans and chimpanzees share more DNA than two varieties of this animal do. In the Kitum Cave, a population of these animals mines salt. Extinct relatives of these animals include mastodons and mammoths and these animals are the largest living land animals. For the point, name these large-eared animals known for their ivory tusks.

ANSWER: elephant

Tiebreakers

(Tossup 31) Some of these animals were stolen after Queen Medb argued with her husband about who was richer. Shiva rides a white one of these animals named Nandi. The Cacus stole some of these animals from Heracles who had himself stolen them from Geryon. These animals are sacred in Hinduism and thus are not eaten. The Minotaur is half human and half, for the point, what livestock animal?

ANSWER: cow (accept cattle; accept bull; accept steer)

(Tossup 32) Russell's paradox describes a contradiction involving these entities which showed a weakness in Georg Cantor's naive theory of them. A countably infinite one of these entities is the subject of David Hilbert's Grand Hotel thought experiment. The cardinality of these entities refers to the number of objects they contain, and binary operations that can be used on these entities include union and intersection. A Venn diagram visualizes, for the point, what mathematical collections of objects?

ANSWER: sets