PRISON BOWL IX
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Round 01

Tossups

1. During this event, many individuals slept on bare mattresses in opposition to a fellow participant being locked in a dark closet. Several individuals took up fire extinguishers to use as weapons in this event, while another figure in it was nicknamed "John Wayne" due to his sadistic demeanor. After Christina Maslach questioned this event's morality, it was terminated after only six days. When this experiment began, coin flips assigned participants as either guards or prisoners. For 10 points, name this experiment conducted by Philip Zimbardo in the basement of its namesake California university.
ANSWER: **Stanford prison** experiment (prompt on **Stanford** experiment) <AT>

2. This man wrote a cantata about Druids practicing pagan rituals in *The First Walpurgis Night*, as well as the opera *Camacho's Wedding*. A violin solo rather than an orchestral tutti opens this composer's Violin Concerto in E minor. Another of this composer's works includes the songs "The Removal of the Spells" and "Ye spotted snakes," and in honor of the Augsburg Confession, he wrote his *Reformation* symphony. This composer was inspired by his visit to Fingal's Cave to write the *Hebrides Overture*. For 10 points, name this composer who included a famous wedding march in his incidental music to *A Midsummer Night's Dream*.
ANSWER: Felix **Mendelssohn** <AT>

3. The complexometric form of this process depends on the formation of coordinate covalent bonds to metal cations. The Winkler test uses this process to detect dissolved oxygen, while another type of this process is performed on colloids and emulsions, and seeks to find those substances' zeta potentials. A crucial step in this process involves analyzing a sigmoid graph and finding its inflection point. This process utilizes a burette, which adds a reactant to an analyte until the equivalence point is reached. For 10 points, name this procedure used to find the concentration of a solution.
ANSWER: **titration** (accept **titrimetry**) <AT>

4. When an old man offers $350 to two men in this novel, one character says, "'Jesus Christ! I bet we could swing her!'" A retired boxer in this novel often keeps a glove of vaseline on his left hand, and is extremely protective of his wife. In a story that one character enjoys hearing, he "lives off the fatta' the land" and when it rains, he says "the hell with goin' to work." This novel's title is based on a line from a Burns poem. The aforementioned wife "gives the eye" to many of the employees on the ranch, and her neck is accidentally broken by one of this work's protagonists. For 10 points, name this novel by John Steinbeck that centers on George and Lennie.
ANSWER: *Of Mice and Men* <RY>

5. This man's attempt to stop a wind farm from being built near a piece of his property was dismissed by five British Supreme Court justices. Scottish Prime Minister Alex Salmond referred to this man as "three times a loser." He announced his bid for the presidency in 2000 on Larry King Live, and in 1988, he made a deal to acquire the Taj Mahal Casino, which generated large debt and filed for bankruptcy. This man infamously called himself "a nice person," and after the San Bernardino shootings, proposed a ban on Muslims entering the U.S.. For 10 points, name this former host of *Celebrity Apprentice*, the current Republican frontrunner in the 2016 Presidential race.
ANSWER: Donald (John) **Trump** (grudgingly accept Donald **Drumpf**, prompt on **The Donald**) <RY>

6. This work discusses Hannibal's "inhuman cruelty" toward his army, as well as the "criminal virtue" of Agathocles of Syracuse. A chapter of this work describes Moses as a conqueror due to his status as an armed prophet. This work begins by discussing the distinction between "mixed" states and purely new states. It denounces mercenaries as purely money-driven, and portrays fortune as a woman who must be beaten. This work states that an effective ruler must emulate both the lion and the fox, and praises Cesare Borgia as one of those rulers. Dedicated to a member of the Medici family, for 10 points, name this political treatise by Niccolo Machiavelli.
ANSWER: *The Prince* (accept *Il Principe*) <AT>

7. Early in his political career, this man signed the Mulford Act, and he received controversy after designating deceased Waffen-SS members as "victims." After a terrorist attack on a Berlin discotheque, this man ordered the bombing of Libya. This signer of the INF Treaty gave the "Morning in America" speech, and proposed an elaborate space-based missile defense system that became ridiculed as "Star Wars." This leader's namesake economic policy became closely associated with supply-side economics. For 10 points, name this Republican U.S. president who ordered Mikhail Gorbachev to "tear down this wall," the predecessor of George H. W. Bush.
ANSWER: Ronald **Reagan** (accept Ronald Wilson **Reagan**) <AT>

8. After the protagonist breaks into a hospital room in this film, a patient puts on her glasses and tells him to "stop." At its beginning, a man is forced to drink bourbon after being kidnapped in an attempt to stage a drunk driving accident after he is mistaken for "George Kaplan." This film's opening credits are projected along the side of a New York City glass skyscraper. During its climax, Leonard pursues its main characters down Mount Rushmore. An iconic scene sees the protagonist nearly hit by a crop-duster plane. Starring James Mason, Cary Grant, and Eva Marie Saint, for 10 points, name this 1959 Alfred Hitchcock spy thriller.
ANSWER: *North by Northwest* <CL>

9. The childhood girlfriend of this work's narrator knifes an elderly woman and is sent away to reform school. Another character in this novel is sent on an errand to allow time for the seduction of Vanita. The narrator of this novel has amnesia until an exile in Sundarban, and later, this novel criticizes the prime minister's overreach during the Emergency. Its narrator has a large, dripping nose and telepathic powers, which he uses to contact others like him, like Shiva "of the Knees" and "Parvati-the-Witch." Saleem Sinai and others are the title figures of, for 10 points, what magical realist novel by Salman Rushdie?
ANSWER: *Midnight's Children* <CL>

10. This body of water was used to access the Steelyard from Lubeck, a Kontor and member of a noted trading organization on it. The *Kingston Emerald* was attacked in this sea during the Cod Wars. Both the scuttling of the German High Seas Fleet in the Scapa Flow and the Battle of Dogger Bank were in this sea during WWI. Its Roughs Tower claims to be the Principality of Sealand. The Kiel Canal connects the Baltic Sea to this sea, and the Anglo-Dutch Wars were primarily fought on it. The Hanseatic League often operated in this sea. For 10 points, name this sea between Britain and Norway that is connected to the Atlantic by the English Channel.
ANSWER: **North Sea** <CL>

11. One of this man's paintings features a lightning bolt in the upper left corner, causing the titular horse to twist its neck backwards. Another of his paintings includes an Assyrian fortress in the background, as well as a bed with elephant heads on its corners. A hand protrudes through rubble beneath a kneeling woman in his *Greece on the Ruins of Missolonghi*. This artist of *The Death of Sardanapalus* used hats to denote social classes in a work which features a Phrygian cap-clad Marianne. That painting centers on a bare-chested woman waving a French flag amidst the July Revolution. For 10 points, name this artist of *Liberty Leading the People*.
ANSWER: Eugène **Delacroix** (accept Ferdinand Victor Eugène **Delacroix**) <CL>

12.One of these things began in Lumpkin County, Georgia, and ultimately was the cause of Indian removal. Rabbit Creek was renamed after George Cormack and Skookum Jim began one of these events. Another of these events was initiated on the rancho of New Helvetia ("hel-VEE-shuh"). Participants in one of these events returned on the *Excelsior* and the *Portland*. These events prompted the Foreign Miners' Tax on the Chinese and used a technique called panning. An 1849 discovery at Sutter's Mill in California prompted one of the largest of these events, which was followed by an explosion in California's population. For 10 points, name these migrations, often West, to gather a certain precious metal.
ANSWER: **gold rush**es [be lenient on word variants]

13. When an object possesses a constant value for this quantity, it can be described with Rindler coordinates, and it will undergo hyperbolic motion. When repeatedly reflected, particles will undergo an increase in a type of this quantity named after Fermi. The equivalence principle likens a uniform gravitational field to this quantity, and increases in it will cause increases in g-forces. For an object undergoing circular motion, this value is equal to velocity squared over the radius of the path, and this value is the derivative of velocity with respect to time. For 10 points, force equals mass multiplied by what value?
ANSWER: **acceleration** (accept linear **acceleration**, do not accept "angular acceleration") <AT>

14. An unconventional work in this form is "Nothing was ever what it claimed to be" by Karen Volkman, and another work in this form proclaims that the speaker has "never felt a calm so deep!" That one does not contain a volta, because it is the Italian type. Another poem in this form, a "Holy" one," is by John Donne and opens, "Death, be not proud." Many of these poems, including one which states, "My mistress' eyes are nothing like the sun," were written for the "Dark Lady." Containing three quatrains and a couplet, for 10 points, identify these closed form poems in iambic pentameter, many of which were written by Shakespeare.
ANSWER: **sonnet**s [accept **English**, **Shakespearean** or **Spenserian** sonnet until "never felt" or accept **Petrarchan** or **Italian** sonnet until "Italian"] <CL>

15. Two people with this relationship helped the Argonauts defeat King Amycus and invade the city of Iolcus; those two people were called the Dioscuri. Two people with this relationship turned their half brothers into the Howler Monkey Gods, and defeated a bird demon named Vucub-Caquix, or "Seven-Macaw." A set of these individuals that escaped the underworld by playing a ballgame was known as the "Hero" example of these entities. One set of these people were suckled by a she-wolf and later founded a city on the Palatine Hill. For 10 points, name this relation shared by the Greek deities Apollo and Artemis.
ANSWER: **twins** [prompt on **brothers** or **siblings**]

16. Some of these entities decussate at the bases of pyramidal cells. These cells can form tracts and are divided into commissural, association, and projection fibers. All mechanoreceptors are this type of cell. Some groups of these cells are called ganglia. Reflex arcs are made from two or more of these cells. Grey matter and white matter, which differ in myelin content, are tissues made of these cells. For 10 points, name these cells that comprise the brain and spinal cord and transmit electrical impulses through synapses.
ANSWER: **neuron**s (prompt on **nerve cells**, do not accept "nerves")

17. The study of Redology is dedicated to a work set primarily in this city. The aftermath of the Northern Expedition saw this city lose its status as capital. The Macartney expedition unsuccessfully sought to create a British embassy in this city, and the Eight-Nation Alliance occupied it in 1900. In 1937, the Marco Polo Bridge Incident south of this city caused the start of the second Sino-Japanese War. In 1860, British and French soldiers burned the Summer Palace in this capital of the Qing Dynasty. For 10 points, name this home of Tiananmen Square, the current Chinese capital.
ANSWER: **Beijing** (accept **Peking**)

18. This writer's first novel consists of the correspondences of two second cousins, twice removed. That novel is *Poor Folk*. A work by this man includes the section "Apropos of the Wet Snow" and is often considered to be the first existential novel. This man was inspired by his imprisonment to write *The House of the Dead*. He tried to create "the positively good and beautiful man" in Prince Myshkin and also created a character who compares himself to Napoleon Bonaparte and murders Alyona [al-YO-na] Ivanovna. That character is Raskolnikov. For 10 points, name this Russian author of *The Idiot* and *Crime and Punishment*.
ANSWER: Fyodor (Mikhailovich) **Dostoevsky** [accept Fyodor **Dostoyevsky**, etc.] <CL>

19. Components of this entity classified as beta-spinel and gamma-spinel are wadsleyite and ringwoodite, and it can be studied by examining the compositions of xenoliths. The bottom portion of this entity's ultra-low velocity D double-prime layer is marked by a seismic velocity discontinuity named after Gutenberg. Largely comprised of olivine, this structure's upper boundary is the Mohorovicic (Mo-ho-ro-vee-chick) Discontinuity, and its convection currents drive the movements of tectonic plates. For 10 points, name this region of the earth between the crust and the outer core.
ANSWER: **mantle** (prompt on **lithosphere** or **asthenosphere**) <AT>

20. This healer of Agatha resurrected the generous Tabitha, and along with John, cured a cripple at the Beautiful Gate. While attempting to flee Rome, this man asked a passerby "quo vadis ("WA-dis")?," and after being imprisoned by Herod, he was freed by an angel. Because he believed himself to be unworthy of dying like Jesus, this man demanded that he be crucified upside-down. This recipient of the "Rock of my Church" speech had previously denied Jesus three times, and he is commonly depicted holding the keys to the gates of heaven. For 10 points, name this apostle who is considered to the first Pope.
ANSWER: Saint **Peter** (accept Simon **Peter**, prompt on **Simon** or similar name variants) <AT/JK>

TB. The protagonists of this novel give up their breakfast on Christmas Day to give it to a poor family, the Hummels, and another character in this novel falls in love with Professor Baehr. One of this novel's characters struggles to control her anger when her youngest sister burns a book she had written, and nearly allows that sister to drown during an ice-skating accident. In this novel, Demi and Daisy are the twin children of John and Meg, and Jo sells her hair to help finance her mother's trip to Washington, DC to nurse her sick father. Later, Jo's little sister Beth catches scarlet fever and dies. For 10 points, name this 19th century novel about the title four March sisters by Louisa May Alcott.
ANSWER: **Little Women** <RY>

Bonuses

1. These mostly-paramagnetic elements exhibit at least two oxidation states, and compounds containing them are often bright-colored due to the movement of their electrons across different energy states. For 10 points:
[10] Name these elements. They include groups 3 to 12 on the periodic table.
ANSWER: **transition metal**s (or **transition element**s, prompt on **metal**s)
[10] Transition metals exhibit their characteristic properties because these four-lobed entities are only partially filled.
ANSWER: **d orbital**s
[10] In two transition metals, an electron from the 4s orbital will move to the 3d orbital in order to fill that orbital halfway, stabilizing the atom but violating the Aufbau principle. Name either of those two elements.
ANSWER: **copper** or **chromium** (either acceptable; accept **Cu** or **Cr**) <AT>

2. One character in this novel ascends to heaven while sewing sheets, and another has an eating competition with the Elephant. For 10 points each:
[10] Name this novel about the multi-generational Buendía family, penned by Gabriel García Márquez. At one point in this novel, a machine gun kills three thousand people.
ANSWER: *One Hundred Years of Solitude* [accept *Cien Años de Soledad*]
[10] *One Hundred Years of Solitude* takes place in this city of mirrors, which is eventually destroyed by a hurricane. José Arcadio Buendía founds this city and imagines it to be surrounded by water.
ANSWER: **Macondo**
[10] This daughter of Ursula Iguarán and member of the second generation of the Buendía family wears a black bandage that represents virginity in the novel. She feuds with her adoptive sister Rebeca over Pietro Crespi.
ANSWER: **Amaranta** Ursula [prompt on **Ursula**] <CL>

3. This trade route was closed after being captured by Tibetans in 678, but was reopened by Empress Wu during the Second Zhou ("JOE") Dynasty in 699. For 10 points each:
[10] Name this route from China to Rome, which Marco Polo traveled.
ANSWER: **Silk Road**
[10] This city on the Silk Road was the Sogdiana capital, and it had the Greek name of Marakanda. It contains the Registan square and the Gur-e-Amir Mausoleum. Babur notably lost control of this city three times.
ANSWER: **Samarqand**
[10] This other Silk Road city, now the capital of Shaanxi province, served as the starting point for the Silk Road. The Terracotta Army was later discovered here.
ANSWER: **Xi'an** [accept **Sian**; accept **Chang'an**]

4. Don't throw away your shot to answer these questions about a musical centering on a "ten dollar founding father without a father." For 10 points each:
[10] Name this 2015 Broadway musical, which opens by describing its title character as a "bastard, orphan, son of a whore and a Scotsman." Characters in this musical rap about the American debt plan in "Cabinet Battle #1."
ANSWER: *Hamilton* [do not accept or prompt on "Alexander Hamilton"]
[10] In *Hamilton*, this character's name is frequently followed by the word "sir." Played by Leslie Odom Jr., he sings "love doesn't discriminate between the sinners and the saints" in "Wait For It" and addresses "Dear Theodosia" to his daughter.
ANSWER: **Aaron** **Burr** [accept either underlined portion]
[10] This MacArthur "Genius Grant" Fellow and Hunter College High School graduate served as the librettist, composer, and star of *Hamilton*. He set his musical *In the Heights* in a largely Dominican-American community.
ANSWER: Lin-Manuel **Miranda** <CL>

5. The gabelle and corvée ("cor-VAY") were types of these economic measures, and the intendant systems in both Bourbon dynasties collected them. For 10 points each:
[10] Name these government levies on goods like salt, property, and wealth.
ANSWER: **tax**es
[10] The "robe" and "sword" were two types of this French social group. They were exempt from most taxes and comprised the Second Estate.
ANSWER: **nobility** or **noble**s
[10] Holders of this position, like Richelieu ("ree-SHELL-you") and Mazarin, sought to protect the French nobility and the Church from taxes, and ended up taxing the poor.
ANSWER: **Cardinal**

6. The artist of this painting painted another version of it with its key objects split into fragments, titled "The Disintegration" of this painting. For 10 points:
[10] Name this painting, which some theorized to represent the Theory of Special Relativity.
ANSWER: *The Persistence of Memory*
[10] The Persistence of Memory is a painting by this Spanish surrealist artist. He fixed a lobster sculpture atop a telephone in his aptly named *Lobster Telephone*.
ANSWER: Salvador **Dali**
[10] In another painting, Dali drew two of these animals with extremely elongated legs. Another Dali painting features them as the reflections of swans.
ANSWER: **elephants** <AT>

7. According to Jesus, "the kingdom of heaven is like a man who sowed good seed." So is getting a 30 on a quiz bowl bonus. Name

some things about the parables of Jesus, for 10 points each:

[10] This figure, a man who helps a Jew who has been beaten along the side of the road, is now used as phrase describing anyone who helps a stranger.

ANSWER: **Good Samaritan**

[10] In one parable, Jesus compares the kingdom of Heaven to this plant. It grows to become a tree "so that the birds of the air come and lodge in its branches."

ANSWER: **mustard** (accept **mustard** plants or **mustard** trees)

[10] This book of the Bible is the only one to depict the mustard seed being grown in a garden as opposed to a field. This book begins with a preface to Theophilus and features the Parable of the Prodigal Son.

ANSWER: Gospel of **Luke** <JK>

8. In this novel, Constance Bonacieux, the seamstress of the Austrian Queen of France, is beloved by a main character. For 10 points each:

[10] Name this historical adventure novel about d'Artagnan's attempts to join a certain group, of which Athos, Porthos, and Aramis are members. Other characters include Comte de Rochefort and Milady de Winter.

ANSWER: The ***Three Musketeers*** [accept Les ***Trois Mousquetaires***]

[10] This author of *The Three Musketeers* also wrote *The Vicomte of Bragelonne: 10 Years Later* and a novel about the revenge-seeking Edmond Dantes, *The Count of Monte Cristo*. He had a son with the same name.

ANSWER: Alexandre **Dumas** [do not accept "Thomas-Alexandre Dumas"]

[10] The final installment of the *Three Musketeers* saga is given this name, which is also the name of a historic prisoner who was arrested under the name Eustache Dauger.

ANSWER: The ***Man in the Iron Mask*** [accept ***L'Homme au Masque de Fer***] <CL>

9. For 10 points each, name some things about the biology behind the game agar.io (agar-ee-oh).

[10] By pressing the spacebar, one can split their cell into two identical copies of itself via this cellular process. In this process, with phases like prophase and metaphase, sister chromatids are separated into two daughter cells.

ANSWER: **mitosis**

[10] Player cells can engulf rainbow food pellets or other players' cells via this action. Macrophages commonly perform this process, where vesicles are formed to house foreign objects.

ANSWER: **phagocytosis**

[10] In agar.io, players move their cell by moving their cursor around the map. Actual amoebas move by extending or retracting these bulges of cytoplasm, formed by the coordinated pushing action of actin microfilaments.

ANSWER: **pseudopod**s (or **pseudopodia**) <AT>

10. It's the city of love but, devastatingly, hatred was brought to this city in November 2015. For 10 points each:

[10] Name this national capital targeted by ISIL in an attack in which over 120 people were killed. President Francois Hollande called the attack on this city "an act of war" in the following days.

ANSWER: **Paris**

[10] One targeted site in Paris was this theater, in which gunmen shot at the crowd before holding hostages. The Eagles of Death Metal were playing at this theater before the attack.

ANSWER: the **Bataclan**

[10] Controversy arose when one of these objects was found near some suicide bombers' bodies. An investigation found that up to eight attackers may have had identical versions of these objects.

ANSWER: **Syrian passport** [accept equivalents; prompt on any sort of official documentation about travel, asylum, migration, etc. from Syria] <CL>

11. This poet wrote that "[i]n the hour of darkness and peril and need, / The people will wake and listen to hear / The hurrying hoof-beat of that steed," which carries the protagonist of his most famous poem. For 10 points each,

[10] Name this poet of "Paul Revere's Ride." He also wrote about an Acadian heroine named Evangeline searching for her lover Gabriel.

ANSWER: Henry Wadsworth **Longfellow**

[10] Longfellow also wrote this epic poem about an Iroquois hero who falls in love with Minnehaha. The poem ends when its title hero leaves on a canoe, encouraging his people to heed the Christian missionaries who have just arrived.

ANSWER: ***The Song of Hiawatha***

[10] Longfellow based the meter of *The Song of Hiawatha* on this national epic of Finland by Elias Lonnrot.

ANSWER: The **Kalevala** <CC>

12. These objects can be longitudinal or transverse, depending on whether the particle displacement is parallel or perpendicular to the direction of their propagation. For 10 points each:
[10] Name these objects that can be modeled by the sine or cosine functions. They're defined by quantities such as amplitude and period.
ANSWER: **wave**s (accept specific types, like sound **wave**s, light **wave**s, or electromagnetic **wave**s)
[10] This phenomenon occurs when a system is exposed to a wave of a certain frequency, causing it to oscillate at a greater amplitude. On string instruments, this phenomenon causes strings that share overtones to vibrate simultaneously.
ANSWER: **resonance** (accept acoustic **resonance**)
[10] A wave will experience resonance when the frequency of the wave is an integer multiple of this quantity. This quantity is also referred to as the first harmonic.
ANSWER: **fundamental** frequency <AT>

13. Not surprisingly, unusual climate patterns have greatly impacted history. Name some stuff about historical events impacted by climate, for 10 points each:
[10] This European climatic change from around 1500 to 1900 created a moral economy in Western Europe and helped end Norse colonies in Greenland. It caused the average European's height to shrink by one inch during one century.
ANSWER: **little ice age** (prompt on **ice age**)
[10] A harsh winter and a short summer caused a famine among the Third Estate, and prompted the 1789 storming of this Parisian prison.
ANSWER: the **Bastille**
[10] Two-thirds of this city burned in 1666 because of a hot summer. Its rebuilding was not planned by Christopher Wren or anyone else, but its streets got wider.
ANSWER: **London**

14. This movement began in Northampton, Massachusetts, where Jonathan Edwards preached "fire and brimstone" sermons. For 10 points each:
[10] Name this new wave of Protestantism in Europe and the American colonies during the 1730s and 1740s.
ANSWER: **First Great Awakening** [prompt on **Great Awakening**]
[10] This Edwards sermon emphasized that anyone could be damned. It described a spider held over hell, with God ready to cut its web at any time.
ANSWER: **"Sinners in the Hands of an Angry God"**
[10] This 18th century Anglican cleric, an open-air orator during the First Great Awakening, had his speeches printed by Benjamin Franklin. He helped to develop revivalist-style preaching along with Jonathan Edwards, and was a notable advocate for Arminianism.
ANSWER: George **Whitefield** [or George **Whitfield**] <AT>

15. This man's *Minute Waltz* was inspired by the sight of a dog chasing its own tail, and his Prelude Op. 28 was nicknamed "Raindrop" from the repeated A-flat which appears throughout it. For 10 points:
[10] Name this Polish composer and virtuoso pianist.
ANSWER: Frederic (Francois) **Chopin**
[10] This Etude by Chopin got its nickname because it was written at the same time as 1831's November Uprising, Poland's failed uprising against the Russian empire. It begins with several rapid descending runs in the left hand.
ANSWER: **Revolutionary** Etude (or Etude **Op. 10, No. 12** or Etude **on the Bombardment of Warsaw**)
[10] Chopin also wrote many of these Polish folk dances for Piano. They're characterized by strong accents placed on the second or third beat of a measure.
ANSWER: **mazurka** <AT>

16. The name for this region comes from the Quechua word for "plain", and its native animals include the rhea as well as several species of armadillo. For 10 points each:
[10] Name this grassland mostly in northern Argentina and southern Uruguay.
ANSWER: The **Pampas** [accept Las **Pampas**]
[10] On the other Argentine coast, this region once housed the Mapuche. With its neighbor Los Lagos, this place is part of the Lake Region of Chile and includes the volcano Villarrica.
ANSWER: La **Araucanía** Region
[10] These excellent horse-riders and ranchers are called huasos in Araucanía and gauchos in the Pampas.
ANSWER: **cowboy**s [accept **vaquero**s, prompt on **ranchero**s] <GA>

17. If one knows the lengths of two sides of a triangle and the angle between those legs, they can use this formula to calculate the length of the remaining side. For 10 points:
[10] Name this trigonometric law named after a function which relates the adjacent side of a right triangle to the hypotenuse.
ANSWER: **Law of Cosines** (accept **cosine formula** or **cosine rule**, prompt on **cosine**)
[10] For right triangles, the Law of Cosines will simplify to this theorem. This is because the cosine of 90 degrees equals zero.
ANSWER: **Pythagorean Theorem**
[10] One can also use the Law of Cosines and a bit of algebra to prove this formula named for an Alexandrian mathematician. It relates a triangle's semiperimeter and side lengths to its area.
ANSWER: **Heron's** formula (or **Hero's** formula) <HL>

18. Because her mother is her nurse, this character considers herself Hindley's foster-brother. For 10 points each:
[10] Name this servant to the Earnshaws and the Lintons, the primary narrator of the work in which she appears. Her given name is Ellen, which much of the upper class calls her as a sign of respect.
ANSWER: **Nelly** **Dean** [accept either]
[10] This landlord, who appears in the same work as Nelly Dean, owns Thrushcross Grange. He is in love with Catherine, but is enraged with jealousy when she marries Edgar, and disappears several years.
ANSWER: **Heathcliff**
[10] Nelly Dean, Heathcliff, Catherine, and Edgar appear in this most famous novel by Emily Brontë.
ANSWER: ***Wuthering Heights*** <CL>

19. This album includes the twelve-bar blues piece "Freddie Freeloader," which features an unorthodox A flat 7 chord in its final two bars. For 10 points:
[10] Name 1959 this album that begins with the track "So What." It pioneered modal jazz, in contrast to the artist's earlier work with hard bop.
ANSWER: ***Kind of Blue***
[10] *Kind of Blue* is an album by this jazz trumpetist, who often performed with his namesake quintet. He released a compilation album under the name *Birth of the Cool*, and experimented with electric instruments on *Bitches Brew*.
ANSWER: Miles **Davis** (accept Miles Dewey **Davis** III)
[10] Davis was inspired by traditional Flamenco themes to write this album's "Saeta" and "Solea." This album features a track named "Will o' the Wisp," which was adapted from Manuel de Falla's ballet *El amor brujo*.
ANSWER: ***Sketches of Spain*** <AT>

20. Greek myth is full of fantastical fauna, but how about the flora? For 10 points each, name some things about plants with peculiar properties in myth:
[10] The entrance of Hypnos' palace contained a number of these opiate flowers, whose seeds contain drowsiness-inducing drugs like morphine. Demeter created them so she could sleep while coping over the loss of Persephone.
ANSWER: **poppies**
[10] Hermes gave Odysseus the herb moly while he was on the isle of this witch to protect him from her magic. This sorceress attempted to seduce Odysseus after she turned his men into pigs.
ANSWER: **Circe**
[10] In the *Metamorphoses*, Glaucus was given the gift of prophecy by this deity after eating a marine plant that turned him immortal. In another myth, this Titaness, the wife of Oceanus, caused the constellations to circle the sky.
ANSWER: **Tethys** <JK>

TB. Proteins are necessary for life, but only if they are built correctly. For 10 points each:
[10] This process is essential for polypeptides to function correctly and creates a 3 dimensional structure. A failure in this process would result in an inactive polypeptide.
ANSWER: protein **folding**
[10] These protein complexes degrade partially- or improperly-folded proteins by proteolysis. They are a mechanism in the larger process of regulating the concentration of proteins within the cell.
ANSWER: **proteasome**s
[10] Like proteasomes, these organelles break down proteins, using acid hydrolase enzymes. These organelles can induce autolysis by releasing enzymes into the cytoplasm.
ANSWER: **lysosome**s <AG>