QQBC Packet 10

1.  **In 2002, it was proven that this number is the only positive cubic number that is one less than a square number. This number, whose divisibility check looks at the last 3 digits, is the only cubic number greater than 1 that appears in the (\*)** Fibonacci sequence. A cube has this many vertices between its 12 edges and 6 faces. For ten points, give this number that is equal to two cubed and serves as the base of the octal number system.  
  
ANSWER: eight  
  
<SCI, OTHER>

For ten points each, give the following about the electron configuration of potassium.  
  
Potassium’s electrons normally occupy the lowest possible energy levels, so the configuration is said to be in this state, as opposed to an excited state.  
  
ANSWER: ground state  
  
In the ground state, the 3p subshell of potassium is filled before the 4s due to this energy level principle. Its name comes from the German for “building-up.”  
  
ANSWER: aufbau principle  
  
The electron configuration of potassium can be shortened to Ar 4s1 [”a” r” 4 “s” 1] by using the symbol for argon, one of these unreactive elements found in Group 18 of the Periodic Table.  
  
ANSWER: noble gases (accept inert gases; prompt on partial answers)  
  
<SCI, CHEM>

2.  **This element reacts with iron oxide in thermite. Molten cryolite is needed to extract this element via the Hall-Heroult process. Because it was more valuable than silver in 1884, this element was chosen for the (\*)** capstone of the Washington Monument. The ore bauxite is the primary source of this metal, the most abundant metal in Earth’s crust. For ten points, name this metallic element whose malleability is exploited to make soda cans.  
  
ANSWER: aluminum (accept Al)  
  
<SCI, CHEM>

The oldest of the legendary “Big Five” symphony orchestras in the US is this city’s Philharmonic, which was founded in 1842 . For ten points each,  
  
Name this city. From 1937 to 1954, Arturo Toscanini conducted the NBC Symphony Orchestra, which played radio concerts recorded in this city’s Radio City Studios at 30 Rockefeller Plaza.  
  
ANSWER: New York City (accept NYC)  
  
After NBC converted the orchestra’s primary recording studio into a TV studio, the orchestra moved their concerts to this famed New York concert venue, named for the steel tycoon and philanthropist who funded it.  
  
ANSWER: Carnegie Hall  
  
The NBC Symphony Orchestra disbanded in 1954 when Toscanini retired, but many of its members came together as the “Symphony of the Air,” conducted by this composer of West Side Story. This man also led the New York Philharmonic for over a decade.  
  
ANSWER: Leonard Bernstein  
  
<FA, OTHER>

3.  **This character is "impatient to mount and ride" while he waits for his friend to climb "by wooden stairs with stealthy tread to the belfry." Later in his namesake poem, this character crosses in a "hurry of hoofs" to (\*)** Medford Town before visiting Lexington and Concord. For 10 points, name this man, the subject of a Longfellow poem that begins "Listen my children, and you shall hear / of the midnight ride of" this man.  
  
Answer: Paul Revere  
  
<LIT, AMER>

This piece was written as part of an “Experiment in Modern Music,” and shares some of its themes with songs like “Embraceable You” and “The Man I Love” by the same composer. For ten points each,  
  
Name this George Gershwin piece, a fusion of classical and jazz music, that premiered in 1924 with Gershwin on the piano.  
  
ANSWER: Rhapsody in Blue  
  
Rhapsody in Blue opens with a famous solo for this instrument which glissandos despite being a single-reed instrument and not, say, a trombone.  
  
ANSWER: clarinet  
  
Gershwin’s “Embraceable You” was premiered on Broadway in 1930 by Ginger Rogers, who went on to star in 10 musical films with this legendary dancer.  
  
ANSWER: Fred Astaire  
  
<FA, OTHER>

4.  **This concept is defined in Spinoza’s Ethics as a “hindrance [...] in the attainment” of useful things. Hannah Arendt wrote a book about the banality of this concept, studying Adolf Eichmann’s trial for war crimes. Gottfried Leibniz coined the term “theodicy” for the attempt to explain this concept in a (\*)** world ruled by an all-powerful God. For ten points, name this philosophical concept, often defined as the absence of good.  
  
ANSWER: evil  
  
<RMPSS, PHIL>

The narrator of this novel joins Queequeg and Starbuck aboard the Pequod, and tells the reader to "call me Ishmael." For 10 points each,  
  
[10] Name this novel about Captain Ahab's search for the title character, who bit off Ahab's leg.  
  
Answer: Moby Dick; or, The Whale  
  
[10] Moby Dick was written by this American author. John Claggart is accidentally killed by the title character of his novella Billy Budd.  
  
Answer: Herman Melville  
  
[10] Turkey, Nippers, and Ginger Nut are coworkers of the title character of this Melville short story, who responds "I would prefer not to" when asked to work.  
  
Answer: Bartleby, the Scrivener  
  
<LIT, AMER>

5.  **In this work, Safie escapes a life in Turkey to live with Felix. This novel's frame story consists of letters from Captain Walton, who hears a confession regarding the deaths of William and Henry Clerval. The title scientist mourns (\*)** Elizabeth Lavenza on his wedding night after he attempts to create a living being from the corpses of convicts. For 10 points, name this Mary Shelley novel in which the title scientist is pursued by his hulking creation.  
  
Answer: Frankenstein; or, The Modern Prometheus  
  
<LIT, BRIT>

This letter claims that "the wages of sin is death, but the gift of God is eternal life in Christ." For 10 points each,  
  
[10] Name this book of the Bible, the first in a series of letters written by a man once known as Saul of Tarsus. Answer: Epistle to the Romans (accept Book of Romans)  
  
[10] Romans is an epistle written by this man, who also wrote to the Corinthians and the Ephesians. Before he was blinded by the Holy Spirit on the road to Damascus, this man was known as Saul.  
  
Answer: Saint Paul the Apostle  
  
[10] Romans, Corinthians, and Ephesians are books in this section of the Bible, which begins with the gospels of Matthew, Mark, Luke, and John and ends with the book of Revelation.  
  
Answer: New Testament  
  
<RMPSS, REL>

6.  **The Aitken Basin lies near this body's south pole. One theory for the creation of this body involves a collision with the ancient planet Theia [THAY-ah]. This body's "ranging experiment" is an attempt to determine the (\*)** distance between the Earth and this object, which is about 238,000 miles. This body contains multiple plains known as marias, which include the Sea of Tranquility. For 10 points, name this satellite of Earth which was walked on by Neil Armstrong.  
  
Answer: moon (accept Luna)  
  
<SCI, OTHER>

This theorem was proven by James Garfield in 1876 and by its namesake, a Greek philosopher and mathematician, millennia earlier. For 10 points each,  
  
[10] Name this theorem comparing the lengths of the sides of right triangles. The corresponding formula is usually stated as "a squared plus b squared equals c squared."  
  
Answer: Pythagorean Theorem (accept Pythagorean Formula)  
  
[10] Garfield's proof of the Pythagorean Theorem involves a particular arrangement of two copies of a right triangle with a line segment connecting two vertices, forming one of these specific four-sided shapes.  
  
Answer: trapezoid (prompt on "quadrilateral")  
  
[10] Garfield's proof involves the computation "quantity a plus b, quantity squared, equals a squared plus 2 times a times b plus b squared"; that computation can be done using this theorem, which guides the expansion of two-term quantities like "a plus b" that are raised to exponents. Pascal's triangle is often consulted in using this theorem.  
  
Answer: Binomial Theorem (accept Binomial Formula)  
  
<SCI, OTHER>

7.  **A simple model of this process was designed by Heckscher and Ohlin. That model was inspired by David Ricardo, who explained how this action can benefit countries through comparative advantage, even if one country is absolutely better at (\*)** producing everything, using an example of wine and cloth. Tariffs may slow this process. A global market allows for, for ten points, what economic action, the exchange of goods between countries?  
  
ANSWER: (international) trade (accept elaborations, such as free trade)  
  
<RMPSS, SOC SCI>

When describing keys, the difference between these two adjectives is the position of half steps in the scales, most importantly the interval to the third note. For ten points each,  
  
Give these two terms. Music written in one style is often described as bright or cheery, while the other is often described as dark or sad.  
  
ANSWER: major and minor (accept in either order; prompt if only one answer is given)  
  
A minor third can also be described as this type of third, because it is one note lower than the major third. Notes may be described by this term if lowered by half a step, or by “sharp” if raised half a step.  
  
ANSWER: flat (accept flatted third; accept flat note)  
  
Many composers have written collections of pieces written for all 24 major and minor keys: one such work, The Well-Tempered Clavier, was written by this German composer.  
  
ANSWER: Johann Sebastian Bach  
  
<FA, AUDIO>

8.  **This novel’s protagonist beats Noah Claypole for insulting his dead mother. In this novel, Old Sally steals a locket that is later thrown into a river by Mr Monks. The protagonist of this novel meets (\*)** Nancy and is inducted into a pickpocket organization led by Fagin after a run-in with the Artful Dodger. For ten points, name this Charles Dickens novel about a title orphan who says “please, sir, I want some more.”  
  
ANSWER: Oliver Twist  
  
<LIT, BRIT>

This family produced three popes, a large bank, and a giant power vacuum in Tuscany after it declined. For ten points each,  
  
Name this powerful Italian family that dominated politics in Florence for multiple centuries. ANSWER: de’ Medici family  
  
In the 15th and 16th centuries, the wealth of the Medici family supported this period of cultural progress. For example, Cosimo de’ Medici was a patron of artists like Donatello.  
  
ANSWER: Italian Renaissance  
  
This member of the Medici family, known as “the Magnificent,” helped keep peace in Italy during the Renaissance and sponsored artists like Michelangelo.  
  
ANSWER: Lorenzo the Magnificent (accept Lorenzo de’ Medici)  
  
<HIST, EURO>

9.  **One of this composer's works includes tubular bells during the break strain. Another of his works counters trombones and tubas with a trio featuring piccolos, and was honored by Congress in 1987 . His (\*)** "Washington Post" earned this director of the US Marine Band the nickname the "March King." For 10 points, name composer of the "Liberty Bell," whose "The Stars and Stripes Forever" is America's National March. Answer: John Philip Sousa  
  
 <FA, AUDIO>

Ross Gorman used this single-reed instrument to improvise a glissando at the beginning of Rhapsody in Blue. For ten points each,  
  
[1O] Name this woodwind that is higher in pitch than a bassoon yet lower than a flute. It has a larger range than an oboe.  
  
Answer: clarinet  
  
  
  
  
  
[1O] This composer of Rhapsody in Blue evoked Caribbean rhythms in his Cuban Overture and described his travels in An American in Paris.  
  
Answer: George Gershwin.  
  
  
  
  
  
[1O] This composer wrote the clarinet concerto Gnarly Buttons and heavily used woodblock in his Short Ride in a Fast Machine.  
  
Answer: John Coolidge Adams (do not accept "John Luther Adams")  
  
<FA, AUDIO>

10.  **This author's work, which was discovered by Miep Gies [meep gees], is set in the achterhuis. Most of this author's work is addressed to Kitty. This author's roommate, Albert Dussel, and her sister, Margot, feature in her (\*)** only book, which discusses a young romance with Peter van Pels and calisthenics routines in a secret annex in Amsterdam. For 10 points, name young girl who wrote a diary while hiding from the Nazis.  
  
Answer: Annelies Marie "Anne" Frank  
  
<HIST, EURO>

This essay states that “History cannot bring enlightenment; only individual searching can.” For ten points each,  
  
Name this essay that instructs the reader to “trust thyself.” This essay reinforces its author’s idea of rejecting conformity by stating “a foolish consistency is the hobgoblin of little minds.”  
  
ANSWER: Self-Reliance  
  
This Transcendentalist author wrote “Self-Reliance.” This author of the Over-Soul allowed his friend Henry David Thoreau to stay on his land so that the latter could write Walden  
  
ANSWER: Ralph Waldo Emerson  
  
In a chapter titled Spring, Thoreau states he witnessed the green rebirth of this concept. While at Walden Pond, Thoreau wandered the woods and observed nearby animals to become one with this concept.  
  
ANSWER: nature  
  
<LIT, AMER>

11.  **This artist painted the title Babylonian king turning in shock at a Hebrew inscription on the wall in a scene from the Book of Daniel. This artist of Belshazzar’s Feast depicted the arm of a convict being dissected in The (\*)** Anatomy Lesson of Dr. Nicholaes Tulp. A man waves a blue and yellow striped flag in a painting by this artist that was commissioned by Franz Banning Cocq and named for its dark varnish. For ten points, name this Dutch artist of The Night Watch.  
  
ANSWER: Rembrandt (Harmeenszoon) van Rijn (accept either underlined part)  
  
<FA, VISUAL>

This phenomenon allows battleships to float even though steel is denser than water. For 10 points each,  
  
[10] Name this upward-directed force experienced by an object immersed in a liquid that is equal to the weight of the fluid displaced.  
  
Answer: buoyancy (accept buoyant force)  
  
[10] This Greek mathematician's principle explains buoyancy, and he supposedly shouted "Eureka!" after realizing that water displacement could be used to prove a gold crown was fake. This man also established the law of the lever.  
  
Answer: Archimedes  
  
[10] The buoyant force can be used to float heavy objects because an increase in fluid pressure is exerted in all directions, a fact explained by this French mathematician's principle. This man used his principle to build the first hydraulic press.  
  
Answer: Blaise Pascal  
  
<SCI, PHYS>

12.  **A platinum wire around a ceramic core forms the highly accurate resistance type of this device. A psychrometer uses both the wet- and dry-bulb types of this to find the dew point, and one of them is used to collect data from a (\*)** calorimeter. An ammonium chloride mixture will register zero on the mercury type of this device invented by Gabriel Fahrenheit. For ten points, name this device that may use the Celsius scale to measure temperature.  
  
ANSWER: thermometer  
  
<SCI, CHEM>

West Egg, East Egg, and the Valley of Ashes are locations in this highly symbolic novel. For 10 points each,  
  
[10] Identify this F. Scott Fitzgerald novel about a mysterious bootlegger and his love for Daisy Buchanan. This novel is narrated by Daisy's cousin, Nick Carraway.  
  
Answer: The Great Gatsby  
  
[10] In The Great Gatsby, a fading billboard representing God looms over the Valley of Ashes and advertises the services of Dr T.J. Eckleburg by displaying these body parts.  
  
Answer: eyes (prompt on "glasses")  
  
[10] Gatsby's longing for Daisy is represented in the novel by a light of this color that sits at the end of the Buchanan's dock.  
  
Answer: green  
  
<LIT, AMER>

13.  **In this work, Hygd rejects Heardred's [HERD-red] claim to the throne, and after Aeschere [ASH-hayr-ay] is killed, Hrunting [h-RUN-ting] is loaned to this poem's title figure as he dives into the sea. (\*)** Wiglaf helps kill a dragon in this epic poem, whose title Geat ["gate"] kills an underwater creature who had invaded the mead-hall Heorot [HAY-oh-roht] to avenge her son's death. For 10 points, name this Old English  
  
epic poem about the slayer of Grendel. Answer: Beowulf  
  
<LIT, BRIT>

In an opera by Puccini [poo-CHEE-nee], Musetta, Colline, and Marcello sell their possessions to buy this character some medicine, but she dies before they return. For 10 points each,  
  
[10] Name this operatic character, who asks Rodolfo to help light her candle.  
  
Answer: Mimi  
  
[10] Mimi dies of tuberculosis in this Puccini opera, which inspired the musical Rent.  
  
Answer: La Boheme  
  
[10] La Boheme is set in the Latin Quarter and near the Barriere d'Enfer in this French capital city.   
  
Answer: Paris  
  
<FA, AUDIO>

14.  **An ebulliometer determines the alcohol content of wine by accurately measuring this quantity. Azeotropic mixtures have a constant value for it, making separation by distillation impossible. The energy needed to reach this value is called the (\*)** heat of vaporization. Vapor pressure equals atmospheric pressure at, for ten points, what temperature at which a liquid changes into a gas, equal to 100 degrees for water?  
  
ANSWER: boiling point (accept boiling temperature)  
  
<SCI, CHEM>

This man created a wooden bull that led to the birth of a cow-headed monster. For 10 points each,  
  
[10] Name this inventor, who built the Labyrinth in which he and his son, Tcarus, were imprisoned.  
  
Answer: Daedalus  
  
[10] Daedalus was imprisoned for building the wooden bull that allowed Pasiphae, the wife of this Cretan king, to conceive the half-cow Minotaur.  
  
Answer: King Minos  
  
[10] Daedalus escaped his imprisonment by building two sets of these objects. Unfortunately, his son's set of these fell apart when he went too close to the sun.  
  
Answer: wings  
  
<RMPSS, MYTH>

15.  **This condition is the subject of the Pacman conjecture, and government restrictions can lead to the "coercive" type of it. Economies of scale help create the "natural" type, which includes utilities like electricity, water, and telecommunications. This (\*)** market structure often occurs due to high barriers to entry, and it leads to higher prices due to lack of competition. For 10 points, name this market structure in which there  
  
is only one seller. Answer: monopoly  
  
<RMPSS, SOC SCI>

This type of dance employs graceful movements such as arabesq es and piro ettes. For ten points each,  
  
[10] Name this performance dance style that includes the Shaker-hymn-inspired Appala ian Spring and cowboy-influenced Rodeo [roh-DA -oh]. Its performers often wear tutus.  
  
Answer: ballet  
  
[10] This woman choreographed Appala ian Spring and taught a style of dancing focusing on spirals and "contraction and release."  
  
Answer: Martha Graham  
  
[10] This American composer wrote the music for Appala ian Spring and Rodeo, as well as a Fan are or t e Common Man.  
  
Answer: Aaron Copland  
  
<FA, OTHER>

16.  **The bookshelves of this work's protagonist include the Vigiliae Mortuorum of a "forgotten church," and the protagonist plays "The Haunted Palace" on his guitar for this story's narrator. The narrator hears the shriek of a dragon while reading a story to (\*)** Roderick, but the sound turns out to be Madeline, who escapes from her tomb to die with her brother in this story. For 1O points, name this short story by Poe in which the title "House" crumbles.  
  
Answer: The Fall of the House of Usher  
  
<LIT, AMER>

In this novel, Roger rolls a boulder onto a conch shell that had been used to call meetings. For 10 points each,  
  
[10] Name this William Golding novel about a group of young boys, including the twins "Samneric" and the choirboy Jack, who are stranded on an island.  
  
Answer: Lord of the Flies  
  
[10] In Lord of the Flies, this chubby boy is killed by the boulder Roger rolls. This character's glasses are used to light signal fires.  
  
Answer: Piggy  
  
[10] At the end of Lord of the Flies, a Royal Navy officer shows up to save the boys. The officer is an example of this plot device, whose name means "god from the machine," in which a new character is introduced to solve a problem.  
  
Answer: deus ex machina  
  
<LIT, BRIT>

17.  **In this modern-day country, the 722 Battle of Covadonga sparked a centuries-long war against Islamic forces. The Alhambra Decree expelled practicing Jews from this country, which was unofficially unified after the marriage of monarchs from (\*)** Castile and Aragon. Ferdinand and Isabella maintained Catholic power through the Inquisition in, for ten points, what country that signed the Treaty of Tordesillas with its western neighbor, Portugal?  
  
ANSWER: Kingdom of Spain  
  
<HIST, EURO>

This goddess had an affair with Ares, which was revealed when her husband captured them together in a fine net and dragged them to Olympus in shame. For ten points each,  
  
Name this Greek goddess of love and beauty. ANSWER: Aphrodite  
  
Aphrodite’s jealous husband was this god, who in some stories fell from Olympus after Hera created him by herself. ANSWER: Hephaestus  
  
Aphrodite was also the lover of this extraordinarily beautiful mortal man, and became so distraught at this man’s death during a hunt that she caused anemone flowers to bloom where his blood fell.  
  
ANSWER: Adonis  
  
<RMPSS, MYTH>

18.  **One character in this work is attacked by dogs because Joseph believes that he stole a lantern. Another character in this novel raises Hareton to be illiterate as revenge for the childhood abuse he suffered from (\*)** Hindley. Nelly Dean narrates the events of this work to Mr. Lockwood, who has rented Thrushcross Grange. For 10 points, name this novel by Emily Bronte, in which Catherine and Heathcliff are finally buried together near the title house.  
  
Answer: Wuthering Heights  
  
<LIT, BRIT>

GPS relies on 31 of these devices, each containing a precise atomic clock. For ten points each,  
  
Name these orbiting devices that can be used to monitor weather, gather intelligence, and relay communication signals back to Earth.  
  
ANSWER: artificial satellites  
  
Most communications satellites have this type of orbit exactly 22,236 miles above the Earth’s equator. A satellite in this orbit appears to stand still in the sky because its period of revolution matches the Earth’s rotation rate.  
  
ANSWER: geostationary equatorial orbit (accept GEO; prompt on “geosynchronous” orbit)  
  
The idea of placing communications satellites into geostationary orbit was first suggested by this science fiction author, better known for works like Rendezvous with Rama and 2001: A Space Odyssey.  
  
ANSWER: Arthur C. Clarke  
  
<SCI, OTHER>

19.  **This party sponsored John C. Fremont in its first presidential election. Thaddeus Stevens led a Radical faction of this political party that attempted to impeach Andrew Johnson. After the Civil War, this party supported (\*)** Reconstruction, in contrast to its Southern-based rivals. For ten points, name this political party that elected Abraham Lincoln President over John Breckenridge and Stephen Douglas, a pair of Democrats.  
  
ANSWER: Republican Party (accept Grand Old Party; accept GOP)  
  
<HIST, AMER>

This Tsar founded the Streltsy. For 10 points each,  
  
[10] Name this Russian Tsar who controlled the Oprichnina and murdered his own son. This Tsar, whose cruelty is marked by his epithet, was also responsible for the massacre of Novgorod.  
  
Answer: Ivan the Terrible (accept Ivan IV Vasilyevich; accept Ivan Grozny)  
  
[10] Tvan the Terrible was responsible for the conquest of this northern Russian region. This region, which composes the majority of Russia, is largely a sparsely populated tundra.  
  
Answer: Siberia  
  
[10] In celebration of conquering Kazan, Tvan the Terrible constructed this colorful cathedral. According to legend, Tvan had the architect of this structure blinded to preserve its unique beauty.  
  
Answer: Saint Basil's Cathedral (accept The Cathedral of Vasily the Blessed; accept Cathedral of the Intercession of the Most Holy Theotokos on the Moat; accept Pokrovsky Cathedral)  
  
<HIST, EURO>

20.  **This tissue is absent in the class Chondrichthyes [khan-DRIK-thee-eez], and this tissue's epiphyseal plates contain the Haversian canals. Hematopoietic [HEE-mat-oh-poh-YET-ik] stems cells form within long structures made of this tissue, which can suffer (\*)** rickets due to a lack of vitamin D or calcium. This tissue is made by osteoblasts and surrounds marrow. For 10 points, name this tissue that makes up the skeletal system.  
  
Answer: bone tissue (accept osseous tissue)  
  
<SCI, BIO>

If a chemical causes Salmonella bacteria to start synthesizing histidine, then the Ames test indicates it is likely one of these substances. For ten points each,  
  
Give this term for agents, like high frequency radiation and aromatic hydrocarbons, than can permanently alter an organism’s DNA.  
  
ANSWER: mutagenic (prompt on “carcinogen”)  
  
Mutagens cause mutations of these regions of DNA, the molecular units of heredity. Alleles [uh-leels] are variants of these entities.  
  
ANSWER: genes  
  
A frameshift mutation in the NOD2 gene results in this inflammatory bowel disease, named for its American discoverer, that is caused by the immune system attacking patches throughout the digestive tract.  
  
ANSWER: Crohn’s disease  
  
<SCI, BIO>