1. This man was replaced in one role by Raymond T. Odierno. In 2007 MoveOn.org published a full page ad in the New York Times condemning this man's "betrayal." From 2008 to 2010 this man moved to Tampa, Florida to head U.S. Central Command. In 2010, this man returned to field command after an interview in *Rolling Stone* led to the ouster of Stanley McChrystal from command in Afghanistan. For 10 points, name this Army General known for his success in Iraq.
ANSWER: David Howell **Petraeus**

015-10-24-05101

2. An astronomical device called a *torquetum* (tor-KAY-tum) is depicted near the top-right of this painting, while a crucifix half-hidden behind a curtain can be seen in the top-left corner. A globe is placed next to one of the title figures, who wears a large fur-trimmed coat and stands on an Oriental carpet. This painting depicts Georges de Selve and Jean de Denteville, as well as an example of *anamorphosis* (aa-nah-more-FO-sis). For 10 points, name this painting with a notable distorted skull, painted by Hans Holbein the Younger.
ANSWER: The ***Ambassadors***

080-10-24-05102

3. The Italian term that translates to this English word names a genre of horror movies. In Dutch and Afrikaans, this word is "geel" (keel), and in Arabic it is "asfar." The Esperanto word for this color, "flava," (FLAH-vah) is a direct copy of the Latin word "flavus" (FLAH-wus). In German this color is "gelb," in French this color is "jaune," (zhoon) and in Spanish it is "Amarillo" (ah-mah-REE-yo). For 10 points, name this color, the English word for which can also mean cowardly.
ANSWER: **yellow**

015-10-24-05103

4. Some kinds of these locations are named for Benioff and Wadati. A type of volcano that can be found near these regions composes the Ring of Fire. These regions are the opposite of divergent boundaries. For 10 points, name these regions that are formed when an oceanic plate slides beneath another tectonic plate, pressing the lower plate deeper into the Earth.
ANSWER: **subduction zone**s

081-10-24-05104

5. This composer wrote the "Veil Song" for the character of Princess Eboli in his *Don Carlos.* Before he composed one of his few comic operas, which was based on *The Merry Wives of Windsor,* his name became a coded acronym for the Italian unification movement. This composer of *Falstaff* also had the Duke of Mantua sing about fickle women in "La donna e mobile" (MOW-bee-lay) from his opera *Rigoletto.* For 10 points, name this composer of *Otello, La Traviata,* and an opera about an Ethopian princess who is buried alive, *Aida* (eye-EE-duh).
ANSWER: Giuseppe Fortunino Francesco **Verdi**

019-10-24-05105

6. Measurements can be transformed in this theory using Lorentz transformations. This theory was proposed in a 1905 paper, the same year in which its formulator proposed theories to explain capillary action and Brownian motion. The underlying principle of this theory is that the speed of light is the same for all reference frames, allowing one to derive that energy equals mass times the speed of light squared. For 10 points, name this theory proposed by Einstein that is contrasted with a "general" counterpart.
ANSWER: **special relativity** [prompt on **relativity**; do not accept "general relativity"]

026-10-24-05106

7. This character sings backup vocals on "Midnight Train to Georgia" with two colleagues at a karaoke bar. This character puts milk in the door of the refrigerator in an attempt to break up a relationship between his best friend and his friend's first ex-wife. He attempts to give a book that was pawned by Alvie to his boss, who breaks off her engagement with Lucas to be with this man. He works at Princeton-Plainsboro Hospital with Foreman, Wilson, and Cuddy. For 10 points, name this sarcastic TV doctor.
ANSWER: Gregory **House** [or **Greg**ory House]

8. One composition in this genre uses a 5/4 "limping waltz" and has the marking "pppppp" for extra quietness. Another of these compositions uses "Goin' Home," a spiritual, and another, which commemorates the July Revolution, was written by Berlioz and is called "Funeral and Triumphant." The "Queen" and "Miracle" ones are among those nicknamed for Paris and London, which were written by a man who composed 104 of these works in total. For 10 points, identify this type of composition, examples of which include Tchaikovsky's *Pathetique* and Dvorak's *New World*.
ANSWER: **symphony** [or **symphonies**]

9. This country has been looked to as a model for its Bolsa Familia, a poverty-fighting program that employs conditional cash transfers. In January of 2011, over five hundred people died in a series of mudslides and floods in this country. This country has been led since 2003 by the Workers' Party, which is currently headed by Dilma Rousseff, after the retirement of longtime president Lula da Silva. For 10 points, name this largest South American country.
ANSWER: Federative Republic of **Brazil** [or Republica Federativa do **Brasil**]

10. This protein is produced through a process called cornification, and it is consumed by the fungus that causes athlete's foot. A beta variety of this protein adds rigidity to the skin of reptiles and contributes to the resilience of porcupine quills and turtle shells. That property is the result of this protein containing an an amino acid that forms disulfide bridges with itself through permanent crosslinking, That cysteine-based composition has led to this protein's abundance in human skin, as well as other parts of the body. For 10 points, name this protein that also forms human hair and nails.
ANSWER: **keratin**

11. This play ends with a performance of the song "Hey, ho, the wind and the rain" by a jester. A subplot in this play involves a plot between Andrew Aguecheek, Sir Toby Belch, and the aforementioned jester Feste to humiliate the uptight steward Malvolio, who wants to marry his lady Olivia. However, Olivia actually falls in love with a character who disguises herself as the man Cesario after a shipwreck off the Illyrian coast. For 10 points, name this William Shakespeare comedy which contains the marriage of Viola and Duke Orsino.
ANSWER: *Twelfth Night, or What You Will*

12. The value of this constant was originally calculated by Johann Josef Loschmidt, so this constant is sometimes represented by a capital L. It is the Faraday constant divided by the elementary charge, and is also the conversion factor from microscopic to macroscopic units, such as grams. It is defined as the ratio of the number of entities to the amount of a substance, or the number of entities in one mole of a substance. For 10 points, name this chemistry constant which is equal to 6.022 times ten to the twenty-third.
ANSWER: **Avogadro**'s number

13. This man led the forces that suppressed the Kronstadt Rebellion. In his tract "Works and Prospects," he outlined his theory of permanent revolution. This man headed the Soviet delegation in negotiating the Treaty of Brest-Litovsk. He founded the Red Army to fight against the monarchist White Army. For 10 points, name this Soviet revolutionary who was assassinated by an agent of Josef Stalin in Mexico in 1940 using an ice pick.
ANSWER: Leon **Trotsky** [or Lev Davidovich **Bronstein**]

14. Among this author's characters are Charles Morel, a talented violinist; a landscape artist named Elstir; and Vinteuil (VAN-tuy), a composer who writes a successful sonata. He also described the marriage between Madame Verdurin and the Prince of Guermantes (GER-mont). Those characters all appear in a series of works whose first entry is about Odette de Crecy (CRESS-ee) and Charles Swann; that first entry is named *Swann's Way*. For 10 points, name this French author of the seven-volume *Remembrance of Things Past*.
ANSWER: Marcel **Proust**

15. A "checkerboard" variety of this procedure is undergone by reagents in the ELISA assay. Another type of this process is named after Karl Fischer and used to determine the amount of water in a sample. One type of this process utilizes bromthymol (BROM-thigh-mol) blue or phenolphthalein (FEEN-ulth-ALE-een) depending on the strength of the acid and base involved. Those components are added until an equivalence point is reached. For 10 points, identify this laboratory technique used to determine the concentration of a solution by adding incremental amounts of another known solution.
ANSWER: **titration**

1A. What scientist wrote *The Sceptical Chymist* and is the namesake of a gas law that states that at fixed temperature, pressure and volume are inversely proportional?
ANSWER: Robert **Boyle**

1B. Name the first Indian prime minster who teamed up with Josip Broz Tito and Gamel Abdel Nasser to found the Non-Aligned Movement.
ANSWER: Jawaharlal **Nehru**

2A. Which author wrote about an attempt by a wayward monk to convert a colony of birds to Christianity in his satirical novel *Penguin Island*?
ANSWER: Anatole **France**

2B. What famous Gameboy game requires the player to stack different-shaped blocks together so that they form a complete line across the screen?
ANSWER: *Tetris*

3A. This is a 10-second calculation question. You have 4 mauve socks, 8 sepia socks and 18 cyan socks in a drawer. What is the probability of selecting a cyan sock if you choose a sock at random from the drawer?
ANSWER: **3/5** [or **0.6**]

3B. This is a 10-second calculation question. What is the harmonic mean of the set {2, 6}?
ANSWER: **3**

4A. What metrical structure, consisting primarily of unrhymed iambic pentameter, was used in the plays of Shakespeare and his contemporaries?
ANSWER: **blank verse**

4B. Which Mexican muralist is best known for creating works such as *Gods of the Modern World* for his series *The Epic of American Civilization* at Dartmouth College?
ANSWER: Jose Clemente **Orozco**

5A. This is a 20-second calculation question. What is the fifth root of $32 x^5 - 160 x^4 + 320 x^3 - 320 x^2 + 160 x + 32$?
ANSWER: **2 x - 2**

5B. This is a 20-second calculation question. If the height of a cylinder is increased by a factor of 4, by what factor must the radius be increased to obtain a cylinder with a volume 4096 times that of the original?
ANSWER: **32**

6A. What Greek letter is used to represent the Lorentz factor in the theory of relativity and a type of high frequency radiation at the end of the electromagnetic spectrum?
ANSWER: **gamma**

6B. A plant cell can contain several hundred of what organelle, which, in both plants and animals, packages fats and proteins in vesicles for delivery elsewhere?
ANSWER: **Golgi** apparatus [or **Golgi** complex; or **Golgi** body]

7A. This is a 30-second calculation question. Factor $-26 x^2 + 203 x - 60$.
ANSWER: **(13 x - 4)(-2 x + 15)**

7B. This is a 30-second calculation question. What is tangent of quantity pi over 4 end quantity times the secant of quantity pi over 4 end quantity times the sine of quantity pi over 4 end quantity?
ANSWER: **1**

8A. Name the never-married Tudor English monarch who defeated the Spanish Armada and lent her name to the state of Virginia.
ANSWER: **Elizabeth I** of England [prompt on **Elizabeth**]

8B. Name the ultradense astronomical objects which have a singularity at their center.
ANSWER: **black hole**s

9A. Name the squirrel of Norse myth that runs up and down the ash-tree Yggdrasil (IG-drah-sil) sowing discord.
ANSWER: **Ratatosk** [or **Ratatoskr**]

9B. What prophet was known for eating locusts and honey and for being beheaded by Herod Antipas at the direction of Salome?
ANSWER: **John the Baptist** [prompt on **John**]

10A. Name the Special Administrative Region of China which was a Portuguese colony until the 1999 transfer of sovereignty.
ANSWER: **Macao** [or **Macau**]

10B. This Great Plains state is home to one-third of America's nuclear arsenal. What is this state, whose largest city is Fargo?
ANSWER: **North Dakota**

1. One Senator and congressman from this state, Claude Pepper, was nicknamed "Red" for his left-wing positions, and was the architect of a law that abolished most mandatory retirement ages. The Battle of Olustee was the main Civil War battle fought in this state. Henry Flagler was instrumental in establishing railways in this state and making it a tourist destination. For 10 point, name this state that was the home of Osceola, a leader of the Seminoles, and was at the center of the disputed 2000 U.S. Presidential election.
ANSWER: **Florida**

030-10-24-05117

2. At the trial for this event, Samuel Quincy and Robert Treat Paine served as the prosecution, and Josiah Quincy was on the defense team. The two men found guilty for this action pleaded the "benefit of clergy" to escape the death penalty and were also defended by John Adams. Samuel Maverick and Patrick Carr died from wounds obtained at this event. Thomas Preston led the British troops that opened fire during it. For 10 points, name this 1770 event in which a mob was fired upon in a New England city, which resulted in the death of Crispus Attucks.
ANSWER: **Boston Massacre**

023-10-24-05118

3. Entertainment in this story in provided by music from an accordion and by a rendition of the *Iliad* that one character had recently read, even though that character pronounces many of the names incorrectly. At this story's end, the main character is discovered dead by his own hand beneath a two of clubs. Earlier, the main characters discover that Uncle Billy has stolen their mules. The death of Mother Shipton foreshadows the deaths of two lovers and the demise of John Oakhurst in this work. For 10 points, name this short story by Bret Harte.
ANSWER: "The **Outcasts of Poker Flat**"

040-10-24-05119

4. One country during this conflict was first invaded by three units of British paratroopers, after which the U.S. VII Corps was able to make easy headway. An early battle in this war centered on the port city of Khafji. In its aftermath, the northern and southern portions of one country were declared to be "no-fly zones." This war involved the "Highway of Death," in which a colonnade of troops was heavily bombarded during a retreat. For 10 points, name this war involving the Republican Guard of Saddam Hussein during the early 1990's.
ANSWER: First Persian **Gulf** War [prompt on First **Iraqi** War; prompt on Operation **Desert Storm**]

040-10-24-05120

5. In 1940, first baseman Frank McCormick led this team to a World Series championship. It was also the National League team which Sparky Anderson managed to a championship, and the team for which Johnny Van der Meer pitched two consecutive no-hitters. Tony Perez, Ken Griffey Sr., Joe Morgan, and Pete Rose were part of its 1970s "machine," and Barry Larkin played his entire career with this team. For 10 points, name this baseball franchise which Johnny Cuetto, Scott Rolen, and Joey Votto led to the 2010 NL Central title.
ANSWER: **Cincinnati** Reds [or Cincinnati **Reds**]

019-10-24-05121

6. She used extensive photography in her research, which allowed her to write the book *Balinese Character: A Photographic Analysis*. Derek Freeman alleged that this writer had been tricked by her research subjects in a work about her "Fateful Hoaxing." That work involved this anthropologist interviewing 68 girls on the island of Ta'u. She also wrote *A Rap on Race* with James Baldwin and *Sex and Temperament in Three Primitive Societies*. For 10 points, name this woman who published her controversial research on how girls on a Pacific Island view sex in her work *Coming of Age in Samoa*.
ANSWER: Margaret **Mead**

7. Richard Helms ran this organization from 1966 to 1973. Bob Woodward's book *Veil* described William Casey's tenure as head of this organization. While working for this organization, Kermit Roosevelt orchestrated a 1953 coup that overthrew Iranian Prime Minister Mohammad Mosaddeq. The predecessor to this organization was the Office of Strategic Services. For 10 points, name this American government agency that has conducted spying on foreign governments.
ANSWER: **C**entral **I**ntelligence **A**gency

8. One drug used to treat this condition is Clozapine, which is combined with estradiol in treatments for postmenopausal women with this condition. One type of this disease is the hebephrenic type, and the catatonic type of this disease leads to sufferers becoming nearly immobile. Sufferers of this disorder frequently hallucinate and have delusions of grandeur. For 10 points, name this mental disease which can come in a "paranoid" type and whose sufferers will often talk out loud to themselves.
ANSWER: **schizophrenia**

9. This thinker was the subject of ridicule by the newspaper *The Corsair*, and near the end of his life he attacked the bishop H.L. Martensen in several letters. This author of *The Concept of Anxiety* presented three forms of despair in his *Sickness unto Death*, which he wrote under the pseudonym Anti-Climacus. He contrasts the aesthetic and ethical ways of life in his book *Either/Or*, while another work by him centers on Abraham's decision to sacrifice his son Isaac. For 10 points, name this Danish philosopher of *Fear and Trembling*.
ANSWER: Søren Aabye **Kierkegaard**

10. The most common species of this disease is *vivax*, while the deadliest is *falciparum*. The sporozites of this disease become schizonts, which become merozites, which destroy red blood cells. Artemisinin (AR-tuh-MIS-uh-nin) has replaced quinine (KWHY-nine) as the preferred drug to treat this disease, which is characterized by recurrent fevers. Caused by *Plasmodium* protozoa, it is prevented by spraying DDT and hanging nets around beds. For 10 points, name this disease spread by mosquitoes.
ANSWER: **malaria**

11. This man championed *The Duchess of Malfi* in his essay "Four Elizabethan Dramatists." He popularized the idea of the "objective correlative," and influenced New Criticism with works such as "Tradition and the Individual Talent," from his collection of criticism *The Sacred Wood*. He is also known for a work whose notes cite Jessie Weston's Grail history *From Ritual to Romance* and James Frazer's *The Golden Bough*. For 10 points, name this literary critic also known for his own poetry, including *Four Quartets* and "The Waste Land."
ANSWER: Thomas Stearns **Eliot**

12. One of these works by Smetana (SMET-n-uh) is entitled *From My Life*. Mozart composed six of them dedicated to Haydn. Haydn pioneered this form in the six he composed for Count Erdody, two of which are nicknamed "Sunrise" and "Emperor." Beethoven dedicated six of them to Count Razumovsky (rahs-oo-MAWF-skee), Schubert entitled one *Death and the Maiden*, and Dvorak (DVAWR-zhahk) composed an "American" one. For 10 points, name these four-movement works scored for viola, cello, and two violins.
ANSWER: **string quartet**s

13. He wrote that the listener "beholds / Nothing that is not there and the nothing that is" in "The Snow Man." The title object "did not give of bird or bush / Like nothing else in Tennesee" in his poem "Anecdote Of The Jar." This author asked Ramon Fernandez about lights that "portion out the sea" in "The Idea of Order at Key West." He also described a funeral in a poem where the title ruler whips "in kitchen cups concupiscent curds." For 10 points, name this American poet of "The Emperor of Ice-Cream" and "Thirteen Ways Of Looking At A Blackbird."
ANSWER: Wallace **Stevens**

14. One character in this work uses the handwriting analysis skills of his clerk named Mr. Guest. A different character in this story works in his lab for a week while getting his meals from Mr. Poole. A small boy gets trampled and Sir Danvers Carew (CARE-ee) is murdered by the title character of this work, who at one point transforms in front of his friend Dr. Lanyon. At this work's end, Mr. Utterson learns the truth about the protagonist. For 10 points, name this work by Robert Louis Stevenson about a scientist who has both good and evil personalities.
ANSWER: *The Strange Case of **Dr. Jekyll and Mr. Hyde***

15. In one poem, this author wrote that the value of the subject's love was worth "more than whole mines of gold or all the riches that the East doth hold." Another work by this poet looks at a place where once "lay that store" the poet "counted best," which now "in ashes lie." She wrote that poem after her house caught fire. For 10 points, name this early American female poet of "To My Dear and Loving Husband" and "Verses Upon the Burning of Our House" who had her works published in *The Tenth Muse Lately Sprung Up in America*.
ANSWER: Anne **Bradstreet**

1. This ruler put down the rebellion of Lucius Antonius in the Perusine War. He signed with Lucius' brother the Treaties of Tarentum and of Brundisium. This man supposedly asked Quintilius Varus for his legions back after the Roman defeat at the Battle of Teutoburg Forest. This man formed part of a group along with Lepidus and a man whom this ruler defeated at the Battle of Actium. For 10 points, name this member of the Second Triumvirate who defeated Mark Antony and became the first emperor of the Roman Empire.
ANSWER: Gaius Julius Caesar **Augustus** [or Gaius Julius Caesar **Octavian**us]

023-10-24-05132

2. This type of method can be optimized by reusing the stack frame of the previous function call; that is known as tail optimization. Functions that commonly use this method include the divide-and-conquer solution to Towers of Hanoi and mergesort. A function that uses this procedure without a base case will run forever. Commonly used in binary tree traversals, for 10 points, name this method where a function references itself in its definition.
ANSWER: **recursion** [or **recursive** functions]

093-10-24-05133

3. One of these entities that represents the location of vertices on a graph is the "adjacency" type. One used to identify resemblances between two data points is a similarity type. A collection of second-order partial derivatives of a function may be collected in a Hessian one of these entities. First-order derivatives are collected in the Jacobian one. If one of these entities is invertible, it is row-equivalent to an identity variety, and its determinant is nonzero. Multiplication of these entities is notably not commutative. For 10 points, name this rectangular array of numbers.
ANSWER: **matrix** or **matrices**

081-10-24-05134

4. One novel set in this city features Miss Trixie, who demands a holiday turkey from her employers at Levy Pants, and Burma Jones, a janitor at the Night of Joy. That work centers on a figure who quotes Boethius and disdains "that minx" Myrna Minkoff, Ignatius J. Reilly. John Kennedy Toole's *A Confederacy of Dunces* is set in this city, which is also the setting of a play about a character who "has always depended on the kindness of strangers," Blanche DuBois. For 10 points, name this setting of Tennessee Williams' *A Streetcar Named Desire*.
ANSWER: **New Orleans**

082-10-24-05135

5. This quantity changes the refractive index of a material in the Kerr Effect. It splits spectral lines in the Stark Effect. The product of it and the magnetic field is the Poynting Vector. Its divergence equals charge density over permittivity by Gauss's Law. Equal to charge over radius squared, it is measured in volts per meter. For 10 points, name this vector field symbolized capital E.
ANSWER: **electric field**

079-10-24-05136

The pieces in Muzio Clementi's *Gradus ad Parnassum* and several works of Frrederic Chopin, such as a piece inspired by a Polish revolution, are in what genre of music, usually for the piano, which is designed as a challenging exploration of some aspect of the player's technique?
ANSWER: **etude**s

079-10-24-05137

This is a calculation question. What is the area of a rectangle with a diagonal of length 7 and width 3? ANSWER: **6** square **root** of **10** square units