

1. **One politician from this state noted the difference between the 1832 Democratic Convention and the one at which she gave the keynote address in 1976. In addition to Barbara Jordan, another politician from this state said George H.W. Bush was "born with a silver foot in his mouth" at the 1988 Democratic Convention. That governor of this state was Ann Richards. Another person from this state started the (*) "War on Poverty" as a part of his Great Society. For 10 points, name this home state of President Lyndon Baines Johnson.**

ANSWER: Texas

030-11-29-13102

2. **Max Perutz proposed the mechanism for the action of this protein regulated by the compound 2-3 BPG. According to the Bohr effect, the properties of this protein changes according to the pH. The central active site of this protein contains a ring structure called a porphyrin which has a central iron atom. Carbon monoxide is toxic because of its ability to bind to this protein. A mutation in the gene for this protein found in (*) erythrocytes (UR-ith-rah-sites) causes sickle cell anemia. For 10 points, name this protein found in red blood cells used to transport oxygen.**

ANSWER: hemoglobin

064-11-29-13103

3. **During the 16th century, this country saw the establishment of its modern-day capital by Pedro de Valdivia, who died fighting the native Mapuche (mah-POO-chay) people. Independence forces in this country were defeated at the Battle of Rancagua, but later prevailed against Spanish forces at the Battle of Chacabuco thanks to the efforts of José Carrera and Bernardo O'Higgins. Mineral deposits in this country's (*) Atacama Desert caused it to engage in the War of Pacific against Bolivia and Peru. For 10 points, name this narrow country with its capital at Santiago.**

ANSWER: Republic of Chile [or Republica de Chile]

083-11-29-13104

4. **In Philip Roth's *The Plot Against America*, a radio broadcast of this event is interrupted to announce the death of Presidential candidate Walter Winchell. A novel by W. P. Kinsella deals with the ghosts of men tarnished by involvement in another of these events. Shady dealings regarding one of these events created the fortune of a man who wears (*) human teeth as cufflinks. For 10 points, Meyer Wolfsheim is said to have fixed what sporting event in *The Great Gatsby*, in reference to its actual 1919 rigging by Arnold Rothstein and the Black Sox?**

ANSWER: the World Series [or the 1942 World Series before the word "another" is read; do not accept or prompt on specific series afterwards]

019-11-29-13105

5. **Alternating light and dark bands found at the base of these geological formations are known as ogives (OH-jives). These formations erode the surrounding terrain through processes known as plucking and abrasion. Such erosion can lead to the development of indentations known as (*) cirques (SEERKS), which often have small lakes referred to as tarns. They form crevasses on their surface. For 10 points, name these large flows of ice.**

ANSWER: glaciers

084-11-29-13106

6. **This politician's appointment in 2002 to a vacant Senate seat led to that power being removed from the governor in this politician's state. In 2010, this incumbent Senator failed to gain a nomination on either the Republican or Libertarian ticket for the upcoming election. The Republican nomination went to (*) Joe Miller, who received support in that race against this politician from the Tea Party movement and Sarah Palin. For 10 points, name this Senator whose father used to be governor of Alaska and who won a 2010 election as a write-in candidate.**

ANSWER: Lisa Ann Murkowski

023-11-29-13107

7. **In Germany, one adherent to this political philosophy, Ferdinand Lasalle, was disdained as an "opportunist." This set of ideas was influenced by the thought of utopian thinkers like Claude-Henri Saint-Simon and Robert Owen. In 1864, thousands of adherents to this ideology gathered at the First International. This philosophy teaches about a (*) revolution that will lead to the rule of the proletariat. For 10 points, name this radical philosophy, based on the ideas of the author of *Das Kapital*.**

ANSWER: Communism [or Marxism; or Socialism]

080-11-29-13108

8. **The "Australian" mountain range with this name is a section of the Great Dividing Range, and the "Southern" mountain range with this name is in New Zealand. The Jura (JOOR-uh) Mountains are a section of the major range with this name. The Brenner Pass, which is near (*) Innsbruck, runs through this mountain range, which includes the peaks of Jungfrau (YOONG-FROW) and Mont Blanc. The Matterhorn is another peak in this mountain range, which is the site of Lake Geneva. For 10 points, name this European mountain range that runs through Austria, Italy, France, and Switzerland.**

ANSWER: Alps

027-11-29-13109

9. **This poem describes a passage "thro' the jaws of Death, back from the mouth of Hell," and claims that the title group "Flash'd all their sabers bare, flash'd as they turn'd in air." The title group is described as facing "Cannon to the right of them, cannon to the left of them, cannon in front of them," though "Into the valley of Death Rode the six hundred." It asserts (*) "theirs not to make reply, theirs not to reason why," and begins "half a league, half a league, half a league onward." For 10 points, name this Tennyson poem about a failed cavalry charge.**

ANSWER: "The Charge of the Light Brigade"

081-11-29-13110

10. **Malus's Law gives the intensity of a light ray after it is subjected to this process. This process is often performed in commercial products through the use of dichroic materials, and commonly comes in circular and linear types. It also occurs by reflection when the incident light ray comes in at Brewster's angle. (*) For 10 points, name this process by which a light ray's waves are made to oscillate in only one direction, which is commonly done using Polaroid filters.**

ANSWER: polarization [or word forms]

003-11-29-13111

11. **One of this religion's "Celestial Masters" led the Five Pecks of Rice rebellion. It believes in a Jade Emperor ruling over heaven, and in a principle of "doing without doing" or "wu-wei." Its founder was stopped at the (*) western gate by Yinxi (YIN-shee), and compelled to write down the central text of this religion. For 10 points, name this Chinese religion founded by Laozi (LOWT-zee), which seeks accordance with "the way."**

ANSWER: Daoism [or Taoism]

019-11-29-13112

12. **The early stages of this ruler's time in power are sometimes called the Years of Hunger due to the starvation that occurred in some parts of the country he governed, though later he oversaw his country's economic miracle. This ruler established the Sindicato Vertical trade union as part of his campaign against organized labor. This leader gained experience fighting in the Rif War before winning a (*) civil war in the 1930s as leader of the Falange. For 10 points, name this twentieth century dictator who gave power after his death to Juan Carlos I of Spain.**

ANSWER: Francisco **Francisco Franco**

040-11-29-13113

13. **The term raised to the negative twelfth power in the Lennard-Jones potential accounts for this rule. White dwarfs exhibit electron degeneracy pressure, a factor limiting how much they can compress based on this rule. In general, this rule applies to half-spin particles called fermions meaning two particles can occupy the same region if and only if they have opposing (*) spins. For 10 points, name this rule of quantum mechanics typically stated as no two electrons can have the same four quantum numbers.**

ANSWER: **Pauli exclusion principle**

064-11-29-13114

14. **This artist proposed an S-shaped "line of beauty," which can be seen in his self-portrait *The Painter and his Pug*. He depicted the fates of two apprentices in a series of engravings titled *Industry and Idleness*. Another of his series includes such works as *The Tête à Tête* (TET ah TET) and warns against the dangers of money. This British satirist of (*) *Marriage à-la-mode* is better known for another series of paintings chronicling Tom's descent into Bedlam. For 10 points, name this artist of *A Rake's Progress*.**

ANSWER: William **Hogarth**

080-11-29-13115

15. **This man wrote that the title entities "stand in Time's eye almost as long as flowers" in his poem "Cities and Thrones and Powers." He wrote a poem to raise funds for the families of soldiers in which the title "Absent-Minded Beggar" asks for a donation "When you've finished killing Kruger with your mouth." This man also wrote (*) "East is East and West is West, and never the twain shall meet" in "The Ballad of East and West." 10 points, name this British author of the poems "Gunga Din" and "If," as well as *The Jungle Book*.**

ANSWER: Rudyard **Kipling**

030-11-29-13116

16. **This man composed a work that was meant to be "as Haydn might have written it, had he lived in our day," his *Classical Symphony*. This composer drew on themes from Slavic mythology for the ballet *Ala and Lolli* and reworked it for his *Scythian Suite*. In addition to composing the scores for *Ivan the Terrible* and *Alexander Nevsky*, this man composed a work in which the (*) grandfather is represented by a bassoon and the duck is represented by an oboe. For 10 points, name this Russian composer of *Peter and the Wolf*.**

ANSWER: Sergei Sergeyevich **Prokofiev**

030-11-29-13117

17. **One episode of this show included Izzy LaFontaine, a fictional bassist of Spandau Ballet played by Edward Norton. In another episode, the song "In the Moonlight" is performed by one character's boyfriend Dylan. Other storylines on this show have included the fencing prowess of Gloria's son Manny and the model airplane injury which Jay perpetrates on his son-in-law Phil Dunphy. Other members of this show's title group include the (*) gay couple Cameron and Mitchell and their adopted daughter Lily. For 10 points, name this ABC sitcom about a group of relatives.**

ANSWER: Modern Family

081-11-29-13118

18. **One author from this country wrote *The Traps of Faith* about an earlier writer from this nation. That writer is also known for the poem "Sunstone." Another writer from this country of Sor Juana Ines De La Cruz imagined a dying soldier and member of the PRI recalling his life in *The Death of Artemio Cruz*. That author from this country was inspired by the disappearance of (*) Ambrose Bierce to write *The Old Gringo*. For 10 points, Carlos Fuentes and Octavio Paz hail from what large Latin American country?**

ANSWER: Mexico [or United Mexican States; or Estados Unidos Mexicanos]

082-11-29-13119

19. **The book in which this character appears has a story about a goat with a single horn that is replaced by four smaller horns. This character insists on consuming nothing but vegetables and water after refusing the king's meat. Gabriel interrupts this man after he makes the prediction that the time of captivity for his people will be seventy weeks. In one incident, this character goes to the feast of (*) Belshazzar to interpret the writing on the wall. For 10 points, name this Bible character known for interpreting dreams who was thrown into the lion's den.**

ANSWER: Daniel

064-11-29-13120

20. **This thinker responded to the idea that the title group must give up their identity for political freedom in *On the Jewish Question*. He wrote a thorough critique of Hegel's *Elements of the Philosophy of Right*. This man worked on a treatise that criticized the title system for exploitation of the labor market. Another work cowritten by this thinker described the ideal triumph of the (*) proletariat over the bourgeoisie. For 10 points, name this German philosopher who with Friedrich Engels wrote *Das Kapital* and *The Communist Manifesto*.**

ANSWER: Karl Marx

081-11-29-13121

21. **This ruler sent Corbulo to conquer Armenia and sent Vespasian to defeat the first Judean revolt. His reign saw revolts led by Vindex, Galba, and the Iceni (aye-SEH-nee) tribe under the British queen Boudica. Piso led a conspiracy to kill this husband of Poppaea. This ruler murdered his mother Agrippina the Elder. In 64 CE, this successor of (*) Claudius allegedly committed an act of arson. For 10 points, name this Roman Emperor who "fiddled while Rome burned."**

ANSWER: Nero Claudius Caesar Augustus Germanicus [or Nero Claudius Drusus Germanicus; or Lucius Domitius Ahenobarbus]

079-11-29-13122

22. The posthumous edition of this work included a poem dedicated to Theodore de Banville. One poem in this collection demonstrates synaesthesia by comparing perfumes to the sound of oboes. That poem, "Correspondences," appears in the same section as "The Sick Muse" and "The Albatross." It includes sections entitled "Wine," "Revolt," and "Death," as well as (*) "Spleen and Ideal." The preface to this work addresses the reader as "Hypocrite reader, my likeness, my brother!" For 10 points, name this poetry collection by Charles Baudelaire.

ANSWER: *Les Fleurs du Mal* [or *The Flowers of Evil*]

024-11-29-13123

23. This architect included a central hearth and carport in the Rosenbaum House, one of his Usonian houses. He included lily pad columns in his headquarters for the Johnson Wax company and used the Maya Revival style for a building which survived a 1923 earthquake, Tokyo's Imperial Hotel. He created a winter studio in Scottsdale called (*) Taliesin West, and he built a house for Edgar Kaufmann cantilevered over a creek in Pennsylvania. For 10 points, name this leader of the Prairie School and designer of Fallingwater.

ANSWER: Frank Lloyd Wright

024-11-29-13124

1. One leader of this city interpreted the Delphic suggestion of wooden walls as a call for a strong navy. For 10 points each:

[10] Name this Greek city state which was led by Miltiades at Marathon.

ANSWER: **Athens**

[10] Athens fought its neighbor Sparta in this fifth century BCE war that included the Sicilian Expedition.

ANSWER: **Peloponnesian** War

[10] This was the Athenian who advocated for a strong navy after Marathon. He led the Athenian navy in its victories at Artemisium and Salamis.

ANSWER: **Themistocles**

015-11-29-13201

2. Name some genetic disorders, for 10 points each.

[10] This disease causes the red blood cells to take on an unusual shape, and it especially affects Americans of Sub-Saharan African descent.

ANSWER: **sickle cell** anemia

[10] Sufferers of this disease tend to have unusually long limbs and fingers, and Abraham Lincoln is sometimes thought to have had this disease.

ANSWER: **Marfan** syndrome

[10] This disease, which is caused by a mutation on the HEXA gene, which causes a deficiency of hexosaminidase A. It is especially prevalent among Ashkenazi Jews.

ANSWER: **Tay-Sachs** disease

024-11-29-13202

3. This event was carried after the losers of the Battle of Coleto Creek surrendered themselves to General Jose de Urrea. For 10 points each:

[10] Name this massacre in which American soldiers led by Colonel James Fannin were executed during the Texas Revolution.

ANSWER: **Goliad** Massacre

[10] This Mexican general and dictator ordered the killing be carried out, and he later lost at the Battle of Cerro Gordo while against fighting Winfield Scott during the Mexican-American War.

ANSWER: Antonio López de **Santa Anna**

[10] Cries to remember both Goliad and the Alamo occurred during this deciding battle of the Texas Revolution, which was won by forces under Sam Houston.

ANSWER: Battle of **San Jacinto**

023-11-29-13203

4. Attempts to unify this force with the others has been problematic. For 10 points each:

[10] Name this force that causes masses to attract each other.

ANSWER: **gravity**

[10] The universal gravitational constant is approximately 6.67 times 10 to the negative power this integer when units of meters cubed kilograms to the negative one seconds to the negative two are used.

ANSWER: **11**

[10] Loránd Eötvös carried out a series of experiments to determine the relationship between gravitational mass and this type of mass. This term also is used to describe certain types of reference frames.

ANSWER: **inertial**

001-11-29-13204

5. One of this artist's landscapes shows a peasant boy trying to tame a horse while his family rides through the woods. For 10 points each:

[10] Name this artist of *The Harvest Wagon*, who painted a woman sitting on a green bench next to her rifle-toting husband in *Mr. and Mrs. Andrews*.

ANSWER: Thomas **Gainsborough**

[10] This Gainsborough painting shows Jonathan Buttall holding a feathered cap and dressed in the title color. It hangs across from Thomas Lawrence's *Pinkie*.

ANSWER: *The **Blue Boy***

[10] Gainsborough was the rival of this other British painter, the first President of the Royal Academy, who painted *Sarah Siddons as the Tragic Muse*.

ANSWER: Joshua **Reynolds**

080-11-29-13205

6. This author wrote of an epic duel between the night and noon in his "Ghazal of the Terrible Presence." For 10 points each:

[10] Identify this author who described a "sad wind among the olive trees" in his "Lament for the Death of a Bullfighter" in addition to writing *Yerma* and *The House of Bernarda Alba*.

ANSWER: Federico del Sagrado Corazón de Jesús García **Lorca**

[10] García Lorca was a member of this country's Generation of '27, and was memorably shot and killed by Nationalists during its Civil War.

ANSWER: Kingdom of **Spain** [or Reino de **España**]

[10] In García Lorca's play *Blood Wedding*, this celestial object leads the Bridegroom to his enemy. In Ariosto's *Orlando Furioso*, Astolfo flies his hippogriff to this location.

ANSWER: the **Moon**

020-11-29-13206

7. This composer wrote many of his piano pieces for performance by his friend Ricardo Viñes, including the incredibly difficult *Gaspard de la Nuit*. For 10 points each:

[10] Name this French composer whose fame somewhat unfortunately rests on his repetitive, snare-drum ostinato-containing *Bolero*.

ANSWER: Joseph-Maurice **Ravel**

[10] Ravel was one of the great proponents of this early twentieth-century musical style. Gabriel Faure anticipated the music of this style.

ANSWER: **Impressionistic** music

[10] This French Impressionist composer of avant-garde works like *Dessicated Embryos* and the repetitive *Vexations* also composed the *Gymnopédies*.

ANSWER: Erik **Satie**

026-11-29-13207

8. In a vision, a man prophesied to these objects, and they came together and, given breath, formed an army. For 10 points each:

[10] Name the objects, found in a "Valley" in which a prophet is asked whether they can live.

ANSWER: dry **bones** [or the Valley of the Dry **Bones**]

[10] The Valley of the Dry Bones was a vision of this Old Testament prophet, who also had visions of a divine throne and a wheel in the sky.

ANSWER: **Ezekiel**

[10] This other Old Testament prophet prophesied the virgin birth of a Messiah who would suffer for the sins of the world.

ANSWER: **Isaiah**

003-11-29-13208

9. This religion's end times are called Frashokereti, which are only alluded to in this religion's primary text, the Avesta. For 10 points each:

[10] Name this Persian religion that asserts the existence of the creator Ahura Mazda and is named after a Persian prophet.

ANSWER: **Zoroastrianism**

[10] This antagonist of Ahura Mazda, also called Angra Mainyu, is responsible for the creator of the dragon Azi Dahaka but will be defeated at Frashokereti.

ANSWER: **Ahriman**

[10] Zoroastrian funerary rites include the construction of these raised structures on which the dead are placed, exposing them to the elements.

ANSWER: **Towers of Silence**

081-11-29-13209

10. This quantity is measured using the percent change of the Consumer Price Index. For 10 points each:

[10] Name this quantity that measures the change in price of goods and services over time as a given unit of currency buys fewer and fewer goods.

ANSWER: **inflation**

[10] Inflation is plotted with an inverse relationship to this quantity according to the Phillips Curve. It can come in "frictional" and "structural" variants.

ANSWER: **unemployment**

[10] Many modern economists urge a steady low inflation rate to prevent these economic disasters in which an economy cannot be stimulated and asset holders fear investment.

ANSWER: **liquidity trap**

002-11-29-13210

11. Taking the advice of the rascal Alfred Jingle, one character in this novel goes to a ball and dances with the wife of Dr. Slammer. For 10 points each:

[10] Identify this novel about Augustus Snodgrass, Tracy Tupman, and Nathaniel Winkle, members of a club led by the title character, esquire.

ANSWER: ***Pickwick Papers***

[10] This novel by the author of *Pickwick Papers* is about a member of a gang led by Fagin who memorably asks for some more gruel.

ANSWER: ***Oliver Twist***

[10] *Pickwick Papers* and *Oliver Twist* were written by this British author who wrote about the upbringing of Pip in *Great Expectations*.

ANSWER: Charles John Huffam **Dickens**

020-11-29-13211

12. Clive Durham forces himself to love women only to feel jealous after learning of Alec Scudder's relationship with the title character of one of his novels. For 10 points each:

[10] Identify this author who explored homosexuality in *Maurice* and described the marital shenanigans of the Wilcoxes and Schlegels in *Howards End*.

ANSWER: Edward Morgan **Forster**

[10] In this novel by Forster, one man stabs another during a debt negotiation in the Piazza Signoria in Florence; the grisly sight makes Lucy Honeychurch faint in George Emerson's arms.

ANSWER: A ***Room with a View***

[10] Forster also wrote this novel in which Cyril Fielding asks "Why can't we be friends now" to Dr. Aziz, who is accused of raping Adela Quested in the Marabar Caves.

ANSWER: A ***Passage to India***

020-11-29-13212

13. A recent article in the Onion AV Club claimed that two current TV shows are "pretty much the same show." For 10 points each:

[10] One of the two shows is this high school dramedy whose characters include Sue Sylvester and Will Schuester, who directs the title club.

ANSWER: ***Glee***

[10] The other show is this NBC comedy starring Joel McHale as Jeff Winger, which also features Ken Jeong as the Spanish teacher, Señor Chang.

ANSWER: ***Community***

[10] The aforementioned article compared *Glee*'s Rachel Berry with this *Community* character, who is played by Alison Brie.

ANSWER: **Annie** Edison [or Annie **Edison**]

024-11-29-13213

14. Name these authors of treatises on architecture, for 10 points each.

[10] This Swiss-French pioneer of the International Style went by a pseudonym, designed the Villa Savoye and the planned city of Chandigarh, India, and wrote *Towards a New Architecture*.

ANSWER: Le **Corbusier** [or Charles-Edouard **Jeanneret**]

[10] This Renaissance architect inspired Thomas Jefferson's Monticello with his Villa Rotunda, based on the principles found in his *Four Books of Architecture*.

ANSWER: Andrea **Palladio**

[10] This earlier Italian architect wrote *De pictura*, which contained the first scientific study of perspective. He designed the facade for the Palazzo Rucellai and the Santa Maria Novella and wrote the *Ten Books of Architecture*.

ANSWER: Leon Battista **Alberti**

026-11-29-13214

15. This ruler was the first to take the title of tsar. For 10 points each:

[10] Name this Rurik ruler of Russia who gained a reputation for violence in his oppression of the boyars.

ANSWER: **Ivan the Terrible** [or **Ivan IV** of Russia; or **Ivan Vasilyevich**; or **Ivan Grozny**; prompt on **Ivan**]

[10] This group of a couple thousand enforcers was created by Ivan to help him govern his lands and helped lead to his reputation for cruelty.

ANSWER: **Oprichniki**

[10] Ivan's death started the descent to this period after the end of the Rurik dynasty, during which three false Dmitris claimed the throne and which ended with Michael's starting of the Romanov dynasty.

ANSWER: **Time of Troubles**

023-11-29-13215

16. There are relative and absolute versions of the meteorological measurement.

[10] Name this measure of how much water vapor is in the air.

ANSWER: **humidity**

[10] This is a device for measuring humidity. A simple one is a sling psychrometer.

ANSWER: **hygrometer**

[10] This is the ratio of water vapor mass to the mass of dry air. It is equal to 0.622 times the vapor pressure divided by the quantity pressure minus vapor pressure.

ANSWER: **mixing** ratio

001-11-29-13216

17. Its first president was Edward Mutessa II. For 10 points each:

[10] Name this African country with capital Kampala whose president is Yoweri Museveni.

ANSWER: Republic of **Uganda**

[10] Museveni took power after leading the National Resistance Army to overthrow Tito Okello and this president in 1981's Ugandan Bush War, sometimes called the Luwero Triangle.

ANSWER: Apollo Milton **Obote**

[10] Milton Obote overthrew this supposedly cannibalistic dictator, whose reign saw the Israeli Air Force free some Israelis that Palestinians held hostage at Uganda's Entebbe Airfield.

ANSWER: Idi **Amin** Dada Oumee

079-11-29-13217

18. One way of performing this construction is via the Quadratrix of Hippias. For 10 points each:

[10] Name this geometric construction that cannot be performed just with compass and plain straightedge, but which Archimedes performed with compass and marked straightedge.

ANSWER: **trisection** of an **angle**

[10] This other classical Greek problem was shown to be unsolvable, because it requires constructing a line whose length is exactly the square root of pi.

ANSWER: **square** the **circle** [or equivalents to **construct a square with area equal to that of a given circle**]

[10] Both trisecting an angle and squaring the circle, in general, require the use of these kinds of real numbers that cannot be written as fractions of two integers.

ANSWER: **irrational** numbers

003-11-29-13218

19. The highest point in this range is located at Aneto. For 10 points each:

[10] Name this mountain range that separates the Iberian Peninsula from France and the rest of Europe.

ANSWER: **Pyrenees**

[10] This principality is located in the Pyrenees and is surrounded by Spain and France.

ANSWER: Principality of **Andorra** [or Principat d' **Andorra**]

[10] This autonomous community makes up the northeast region of Spain along the Pyrenees.

ANSWER: **Catalonia** [or **Catalunya**]

023-11-29-13219

20. This essay opens by stating that "There is a difference between one and another hour of life, in their authority and subsequent effect." For 10 points each:

[10] Identify this essay that argues for the existence of a higher consciousness that links us all in a role supplementary to that of God.

ANSWER: "The **Over-Soul**"

[10] "The Over-Soul" was written by this American, who described how "the embattled farmers stood/And fired the shot heard round the world" in "Concord Hymn."

ANSWER: Ralph Waldo **Emerson**

[10] In this essay, Emerson advocates non-conformity, stating that "A foolish consistency is the hobgoblin of little minds."

ANSWER: "**Self-Reliance**"

020-11-29-13220

21. For 10 points each, answer the following about the early history of computers.

[10] This first general all-purpose electronic computer was built during World War II by John Mauchly and Presper Eckert for the original purpose of quickly calculating artillery firing tables.

ANSWER: **ENIAC I** [or **Electrical Numerical Integrator and Calculator**]

[10] This man's designs later allowed ENIAC to serially process arithmetic and transfer operations. His namesake kind of architecture consists of a CPU and a memory that stores both data and instructions for the CPU.

ANSWER: John Louis **von Neumann**

[10] Modern computing did not take off until the invention of this device by Jack Kilby, in which multiple transistors and other electrical components could all be made at once on the same sheet of semiconductor.

ANSWER: **integrated circuit** [or **IC**]

003-11-29-13221