1. **A drop in this quantity in the universe allowed for the ability to form hydrogen atoms. The value for this quantity known as the lambda point separates helium I from the superfluid helium II. This quantity is related to a particle's speed by the (*)** Maxwell-Boltzmann distribution, and is measured by the Rankine scale. Gay-Lussac's Law states that pressure is directly proportional to it. For 10 points, name this quantity measured by the Kelvin and Fahrenheit scales.
ANSWER: **temperature**

020-09-4-15102

2. **Citizens of this state freed Anthony Burns in open defiance of the Fugitive Slave Act. Horace Mann reformed the public schools of this state, which was the site of the Utopian community Brook Farm. The American industrial revolution was sparked by textile mills built in this state's city of (*)** Lowell. The Missouri Compromise separated Maine from this state, which was represented by Senators Charles Sumner and Daniel Webster. For 10 points, name this state where the American Revolution began with battles at Lexington and Concord.
ANSWER: **Massachusetts**

004-09-4-15103

3. **The primitive kidney produces retinoic acid, which stimulates this process in females and suppresses it in males. A prolonged resting phase during this process is known as the dictyotene stage, and the Edward and Klinefelter syndromes result from (*)** nondisjunction during it. This process results in oogenesis and spermatogenesis, and this process as a whole evolved from the binary fission of prokaryotes. Resulting in the creation of four haploid daughter cells, for 10 points, name this type of cell division whose second stage is very similar to mitosis.
ANSWER: **meiosis**

020-09-4-15104

4. **In one poem by this author, the narrator concludes "speak through my words and my blood" after "scal[ing] the ladder of the earth" to reach the title location. This poet concluded a set of poems with one that begins "Tonight I can write the saddest lines." This author wrote poems "to Conger Chowder" and "to an Artichoke" as part of his *Elemental Odes*, and included "The Heights of Macchu Picchu" in his collection (*)** *Canto general*. For 10 points, name this Chilean poet of *Twenty Love Poems and a Song of Despair*.
ANSWER: Pablo **Neruda** [or Neftalí Ricardo **Reyes** Basoalto]

023-09-4-15105

5. **Some of this thinker's lesser known works include "What Are Poets For?" and "The Origin of the Work of Art." He succeeded Edmund Husserl as the chair of philosophy at Freiburg University, where he delivered the speech "What is Metaphysics?" His key idea consists of a person's existentiality, fallenness and thrownness, and is called (*)** dasein. For 10 points, name this Nazi-sympathizing German philosopher who never finished his magnum opus *Being and Time*.
ANSWER: Martin **Heidegger**

050-09-4-15106

6. **This leader criticized another country's military in his *Discord Among the Enemy*, while this man criticized his own country's lack of a mobile, professional army in his *The Army of the Future*. This successor of René Coty opposed Britain's entry into the European Economic Community, and problems in (*)** Algeria brought this man to power a second time with the creation of the Fifth Republic. For 10 points, name this man who worked against the Vichy Regime as leader of the Free French during World War II.

ANSWER: Charles André Joseph Marie **de Gaulle**

7. **Alexander Borodin's second work of this type has a third movement "Nocturne" and is in D major. Beethoven's *Grosse Fugue* was written for this ensemble. One of these by the man who is credited with inventing their form includes the melody of "Deutschland Uber Alles" and is called the "Emperor." Franz Schubert wrote one that has a movement of variations on his song (*)** "Death and the Maiden." The four movement works named for these ensembles were written with lots of plucking by Bartok, and Haydn "fathered" them. For 10 points, name this ensemble of a cello, a viola, and two violins.

ANSWER: **string quartet**

8. **This equation is applied to find delta-P in one derivation of the Kutta-Joukowski theorem. A limited derivation of this statement can be found by integrating Euler's equation, and a special version of this statement manifests itself in the Venturi effect. Pitot tubes use this principle to measure (*)** velocity. It states that the conservation of energy mandates that the sum of kinetic energy density, potential energy density, and pressure is a constant along a streamline, under a steady flow with incompressible fluids. For 10 points, name this principle named for a Swiss scientist, which helps explain how an airfoil creates lift.

ANSWER: **Bernoulli**'s principle

9. **One of Goya's Black Paintings depicts one of these creatures drowning in sand. One of them is present at the titular event in Courbet's *Burial at Ornans*, and one stands on the bank of a river in Constable's *The Hay Wain*. One representing fidelity appears at the bottom of *The (*)* Arnolfini Wedding**, and another lies at the foot of a bed in *Venus of Urbino*. For 10 points, name these creatures who, in a series by C.M. Coolidge, are depicted playing poker.

ANSWER: **dog**s [or clear-knowledge equivalents]

10. **J.K. Paasikivi and Urho Kekkonen developed this nation's neutral stance during the Cold War. The Lapua Movement pushed for a coup following this nation's Civil War, which was won by the Whites. This nation violated the democratic peace theory in the (*)** Continuation War, which followed a war in which this nation used the motti strategy to win the Battle of Suomussalmi. Site of fighting in the Ladoga Karelia and the Mannerheim Line, for 10 points, name this Scandinavian country invaded by the Soviet Union in the Winter War.

ANSWER: **Finland** [or **Suomi**]

11. **The speaker of one poem by this author fears "Eyes I dare not meet in dreams," which supposedly do not appear "in death's dream kingdom." This poet wrote "in the beginning is my end" in a poem divided into sections such as "The Dry Salvages" and "Burnt Norton." The narrator of another poem by this author wonders (*)** "Do I dare / disturb the universe?" This author wrote "this is the way the world ends / not with a bang, but a whimper" in his poem "The Hollow Men." For 10 points, name this American-born British poet of "The Love Song of J. Alfred Prufrock" and "The Waste Land."
ANSWER: Thomas Stearns **Eliot**

12. **Although it is not the cochlea, this structure has some neuronal cells linked by ribbon synapses. Blood flow in this structure's capillaries can be measured using blue field entoptoscopy to test for Scheerer's phenomenon. The inner and outer plexiform layers are part of this structure, which contains a red dot in Tay-Sachs patients and is subdivided into the (*)** fovea and macula. At the point where the optic nerve exits this structure, a blind spot occurs. For 10 points, name this light-sensitive tissue in the inner surface of the eye, which contains photoreceptors like rods and cones.
ANSWER: **retina**

13. **In this country, the Dutch native Henrik Verwoerd was assassinated by Dimitri Tsafendas, and members of the "Spear of the Nation" were charged with conspiracy in the Rivonia Trials. Steve Biko was killed by police in this country, and a protest by people who wanted to be taught in English led to police violence in (*)** Soweto. The treaty of Vereeniging ended the independence of the Orange Free State and the Transvaal in this modern day country, which had been settled by Boers who spoke Afrikaans. For 10 points, name this country that ended apartheid soon before Nelson Mandela became its first black president.
ANSWER: Republic of **South Africa**

14. **This law was first derived by Benoit Clapeyron, and its namesake constant is equal to the Boltzmann constant multiplied by Avogadro's number, which equals approximately 8.3 joules per mole Kelvin. A modification of this law takes into account attractive forces and particle volume and is named for (*)** van der Waals. It can be thought of as a combination of Avogadro's, Boyle's, and Charles's laws. For 10 points, name this equation of state approximating behavior of its namesake state of matter, often represented as PV equals nRT.
ANSWER: **ideal gas** law

15. **This composer's piano pieces include three "Venetian boat songs," "Spinning Song," and "Spring Song." This composer's fourth symphony ends with a lively saltarello, and his short piano pieces are collected in his *Songs Without Words*. This composer wrote a Bergomask representing the dance of (*)** Nick Bottom and a famous Wedding March based on a Shakespeare play set in the forest of Arden. For 10 points, name this nineteenth century German composer of the "Italian" symphony and incidental music to *A Midsummer Night's Dream*.
ANSWER: Felix **Mendelssohn**

16. **In one play by this author, "Schoolboy" Barton records "That's All Right" and dumps Vera, but is arrested when walking from his mother's funeral. This author wrote a play about Boy Willie, who wants to sell an instrument that Berniece insists on keeping. This author of *Two Trains Running* and** (*) *Seven Guitars* wrote a play that includes the never-seen Alberta, who has an affair with the man married to Rose, garbageman Troy Maxson. For 10 points, name this author of the "Pittsburgh Cycle," which includes *The Piano Lesson* and *Fences*.
ANSWER: August **Wilson**

17. **One of this god's sons pursued the nymph Syrinx, causing her to turn into reed pipes. This god killed the giant Argos in order to allow Zeus to abduct Io, and gave the herb moly to Odysseus to help him defeat Circe. This father of Priapus and** (*) Pan was the god of trade and thieves, and traveled on a pair of winged sandals. For 10 points, name this messenger of the Greek gods, whose Roman equivalent was Mercury.
ANSWER: **Hermes**

18. **In one novel by this author, Mr. Campbell and Mr. Davidson notice that the title character failed to take off his seaboots, despite that character's memory of a World War II stranding at sea. This author also wrote a novel in which the discovery of a downed airman leads to the death of Simon. In that work by this author,** (*) Roger lets loose a boulder that crushes Piggy and the conch. For 10 points, name this author of *Pincher Martin*, who also wrote about a group of British boys like Ralph and Jack who lose control on an island without adult supervision in *Lord of the Flies*.
ANSWER: William Gerald **Golding**

19. **This thinker defended Christianity against freethinkers in *Alcipheron* and attacked the notion of fluxions and their use in calculus in *The Analyst*. He argued that human knowledge exists of only ideas and spirits in one work and argued against the rational** (*) materialism of Locke in another. He most famously claimed that *esse est precipi* or "to be is to be perceived". For 10 points, name this idealist English philosopher, the author of *Three Dialogues Between Hylas and Philonous*, and namesake of a university in California.
ANSWER: Bishop George **Berkeley**

20. **This leader won the siege of Taillebourg after a failed revolt with his brothers Henry and Geoffrey against his father. He defeated Isaac Komnenos to take control of Cyprus, which led to his capture by Leopold V, Duke of Austria, who ransomed him to his mother. This ruler gave power to William Longchamp in his absence and spent his final years battling a former ally,** (*) Phillip II of France. This son of Eleanor of Aquitaine was succeeded by King John. For 10 points, name this English king who fought Saladin in the Third Crusade, known for a fiery epithet.
ANSWER: **Richard I** (or **Richard** the **Lionheart**ed)

21. **A novel from this country focuses on Dr. Pimko, who turns the kidnapped writer Johnnie into a young boy, and is called** *Ferdydurke*. **An author from this country wrote the historical novel The Teutonic Knights and a novel about Nero's arbiter Petronius, (*)** *Quo Vadis*. The title character of Sophie's Choice is from this country, which was the birthplace of Isaac Bashevis Singer. For 10 points, name this country home to Witold Gombrowicz and Henryk Sienkiewicz, which is the setting of all novels about Auschwitz.

ANSWER: Republic of **Poland** [or Rzeczpospolita **Polska**]

027-09-4-15122

1. A more expansive definition of this movement was put forth by Vladimir Jabotinsky, who founded its "revisionist" wing. For 10 points each:

[10] Name this movement, advocated by the newspaper *The World* and figures such as Chaim (HIGH-em) Weizmann, which sought the establishment of a Jewish state.

ANSWER: **Zionism**

[10] This convener of the Basel congress and author of *The Jewish State* founded the organized Zionist movement in response to French anti-Semitism in the 1890s.

ANSWER: Theodor **Herzl**

[10] In 1903, Britain proposed establishing a Jewish homeland in this colony. After independence, this country saw the overthrow of Milton Obote (oh-BOAT-ay) by cannibal Idi Amin.

ANSWER: Republic of **Uganda**

019-09-4-15201

2. In this novel, Amelia Sedley marries William Dobbin after the death of George Osborne. For 10 points each:

[10] Name this "novel without a hero" written by the author of Barry Lyndon.

ANSWER: **Vanity Fair**

[10] This Victorian novelist wrote *The Newcomes* and *Vanity Fair*.

ANSWER: William Makepeace **Thackeray**

[10] This amoral protagonist of *Vanity Fair* takes advantage of Joseph Sedley and secretly marries Rawdon Crawley.

ANSWER: Becky **Sharp** [or **Becky** Sharp]

038-09-4-15202

3. This event was a reaction to the Statute of Labourers and featured the priest John Ball giving a sermon. For 10 points each:

[10] Name this fourteenth century uprising in England which was led by Jack Straw and sometimes named for another of its leaders.

ANSWER: English **Peasants' Revolt** of 1381 [or **Wat Tyler**'s Rebellion]

[10] This son of Edward the Black Prince and patron of Chaucer was king of England at the time of the revolt. He stayed in power until Henry IV deposed him in 1399.

ANSWER: **Richard II** of England

[10] Richard II reigned during a lapse in this century long conflict between England and France. It picked up again when Henry V won the Battle of Agincourt.

ANSWER: **Hundred Years'** War [or **Guerre de Cent Ans**]

035-09-4-15203

4. The central character of this novel does not see most of the letters from her sister Nettie, a missionary in Africa. For 10 points each:
[10] Celie writes letters to God and helps blues singer Shug Avery open a pants store in what novel about African-American life in the early twentieth century South?
ANSWER: The *Color Purple*
[10] This member of the first interracial marriage in Mississippi and author of *The Third Life of Grange Copeland* wrote *The Color Purple*.
ANSWER: Alice Malsenior **Walker**
[10] The title character of this Walker novel participates in a love triangle with Lynne and Truman. Cormac McCarthy's novel about the Glanton gang is named for a "blood" one of these.
ANSWER: **Meridian**

5. He supported William Pitt the Younger's rise to Prime Ministry, and he became king of Great Britain during the Seven Years War. For 10 points each:
[10] Name this king, who ruled ruled during the passage of the Stamp Act before becoming senile and having his son rule during the Regency period.
ANSWER: King **George III** of Great Britain and Ireland, Elector and King of Hanover [or **George** William Frederick **III**; or **Georg** Wilhelm Frederick **III**]
[10] King George III pushed Parliament to continue funding to fight this war, in which 13 colonies overseas fought over taxation. It ended with the creation of the United States.
ANSWER: American **Revolutionary War** [or **American Revolution**]
[10] During King George's reign, the four Mysore wars were fought in this country. Lord Mountbatten was a later Governor General of this place.
ANSWER: **India** [or **Bharat**]

6. Rosalind Franklin studied the tobacco mosaic type of these infectious agents. For 10 points each:
[10] Name these not-quite-organisms that can only reproduce in a host cell, types of which include the Epstein-Barr.
ANSWER: **virus**es
[10] In this reproductive process of viruses, the prophage is integrated into the host cell's genome so that the host cell will replicate it and pass it to daughter cells.
ANSWER: **lysogenic** cycle
[10] This protein coat of a virus is often covered with a lipid viral envelope. Many viruses have an icosahedron-shaped one of these structures.
ANSWER: **capsid**

7. Name these aerophones that use reeds for 10 points each:
[10] This instrument, played by Jean Pierre Rampal, has a concerto written for it and harp by Mozart. It is lower pitched than the piccolo, and is a metal cylinder held parallel to the ground.
ANSWER: **flute**
[10] Sibelius's tone poem *The Swan of Tuonela* uses this instrument to represent the swan. It is a double reed instrument pitched in E-flat that is larger than the oboe but not as deep as the bassoon.
ANSWER: **English horn** [or **cor anglais**]
[10] This instrument is often tuned in B-flat major and has a chalumeau register. It has a single reed and plays a glissando in the beginning of a rhapsody by Gershwin.
ANSWER: **clarinet**

8. Identify the following namesakes of laws of physics, for 10 points each.
[10] This man's namesake loop and junction rules for electrical circuits rely on energy conservation, and he discovered rubidium and cesium with burner inventor Robert Bunsen.
ANSWER: Gustav **Kirchhoff**
[10] This namesake of the SI unit of charge also names a law which describes the force two point charges exert on each other.
ANSWER: Charles-Augustin de **Coulomb**
[10] This assistant to Tycho Brahe formulated three namesake laws of planetary motion, the first of which states that planets have elliptical orbits.
ANSWER: Johannes **Kepler**

9. Explorers in this country sought the "lost city" of Vilcabamba, which was determined to be identical with the Espíritu Pampa ruin. For 10 points each:
[10] Name this country, where a wave of fortune-hunters discovered Machu Picchu and other ruins of the Incan empire.
ANSWER: Republic of **Peru** [or Republica del **Peru**]
[10] Machu Picchu and Sacsahuamán (SOCKS-uh-wuh-MON) form a triangle of Incan ruins along with this city. This home to the Golden Garden and Temple of the Sun was the capital of the Incan empire.
ANSWER: **Cuzco** [or **Qosqo**]
[10] Though beaten to the site by Augusto Berns, this American history professor and Senator is generally credited with rediscovering Macchu Picchu, because he publicized the find in 1911.
ANSWER: Hiram **Bingham**

10. George Norris led the revolt against one holder of this position, Joe Cannon. For 10 points each:
[10] Name this position held by Sam Rayburn during the presidencies of FDR and Truman.
ANSWER: **Speaker of the House** [prompt on **Speaker**]
[10] This Republican Speaker of the House from 1871 to 1875 lost the election of 1884 to Grover Cleveland after his association with scandals led Democrats to call him "the continental liar from the state of Maine."
ANSWER: James Gillespie **Blaine**
[10] This Tennessee Democrat was the first Speaker of the House to become President, winning the election of 1844. He declared war on Mexico and gained control of the Oregon Territory as part of his aggressive program of territorial expansion.
ANSWER: James Knox **Polk** [or **Young Hickory**]

11. Examples of these pairs include Hamilton, New Zealand and Córdoba, Spain. For 10 points each:
[10] Give this term for a pair of points on the Earth's surface that can be connected by a diameter through the center of the earth.
ANSWER: **antipode**s
[10] Antipodes can be visualized by overlaying landmasses within the equirectangular or Lambert azimuthal ones of these. A common example of these paradigms is the Mercator.
ANSWER: map **projection**s
[10] The antipode of Washington, D.C. is an island known by this name, which, from 1625 to 1674, was the name of the city now known as New York.
ANSWER: **New Amsterdam**

12. This English king had Thomas More executed for his opposition to the Act of Supremacy. For 10 points each:

[10] Name this man, the father of Queen Elizabeth I and the husband of Catherine Howard and Jane Seymour, among others.

ANSWER: **Henry VIII**

[10] This advisor to Henry VIII started off as legal secretary to Cardinal Wolsey, and he drafted most of the laws that established the Church of England. He oversaw the suppression of the Pilgrimage of Grace, and was later beheaded.

ANSWER: Thomas **Cromwell**

[10] Thomas Cromwell arranged Henry VIII's marriage to this fourth wife. The sister of a German prince, Henry tried to break the marriage contract after seeing her.

ANSWER: **Anne of Cleves**

13. This type of rock is made through lithification. For 10 points each:

[10] Name this type of rock that includes gypsum, shale, and sandstone, which contrasts with metamorphic and igneous rock.

ANSWER: **sedimentary** rock

[10] One group of sedimentary rocks, which includes shale and sandstone, is named after these fragmented pieces of pre-existing rock.

ANSWER: **clast**s [or **clastic** rock]

[10] While conglomerate consists of rounded phenoclasts produced by abrasion, this other kind of gravel consists of randomly oriented, angular clasts produced by fracture.

ANSWER: sedimentary **breccia**

14. This author wrote a drama about the Thirty Years' War general Albrecht von Wallenstein. For 10 points each:

[10] Name this German dramatist who wrote about a character found in bed with his stepmother before being turned over to the Inquisition in *Don Carlos*.

ANSWER: Johann Christoph Friedrich von **Schiller**

[10] In this Schiller play, the tyrannical governor Gessler is killed by the title character, who is forced to shoot an apple off his son's head.

ANSWER: **William Tell** [or **Wilhelm Tell**]

[10] William Tell was forced to shoot that apple after he had failed to bow to one of these objects, which had been placed on a pole by Gessler to assert his power.

ANSWER: **hat** [or equivalents]

15. This artist portrayed mankind's progression from childhood to old age in his series *The Voyage of Life*. For 10 points each:
[10] Name this American artist of *The Ox-Bow*, who painted a civilization's path from *The Savage State* to Desolation in his series *The Course of Empire*.
ANSWER: Thomas **Cole**
[10] Thomas Cole was one of the leading members of this school of art. Its members depicted panoramic American landscapes, including many paintings of its namesake New York waterway.
ANSWER: **Hudson River** School
[10] This other prominent Hudson River School artist painted Thomas Cole and William Cullen Bryant in the Catskills in his painting *Kindred Spirits*.
ANSWER: Asher Brown **Durand**

16. Loschmidt's paradox is an attempt to bypass this statement. For 10 points each:
[10] Name this statement, the violation of which is the aim of Maxwell's Demon.
ANSWER: The **Second Law** of **Thermo**dynamics
[10] The Second Law of Thermodynamics typically states that this is always increasing. It can basically be understood as the amount of disorder in a thermodynamic system.
ANSWER: **entropy**
[10] This man's H-Theorem describes the increase of the entropy of an ideal gas undergoing an irreversible process. His namesake constant is roughly equal to 1.38 times ten to the negative twenty-third joules per Kelvin.
ANSWER: Ludwig Eduard **Boltzmann**

17. Name the following geographical features of South America, for 10 points each.
[10] This location is considered the world's driest desert, and it covers much of Chile's northern coast.
ANSWER: **Atacama** Desert
[10] This lake is suffering from an invasion of duckweed, and it is connected to the Caribbean through the Gulf of Venezuala.
ANSWER: Lake **Maracaibo** or Lago de **Maracaibo**
[10] This dormant volcano in Ecuador is often claimed to be the farthest point of land from the center of the Earth.
ANSWER: **Chimborazo**

18. He inaccurately described "stout Cortez...upon a peak in Darien" in his poem "On First Looking into Chapman's Homer." For 10 points each,
[10] Name this Romantic poet of "La Belle Dame Sans Merci" and "Ode to a Nightingale."
ANSWER: John **Keats**
[10]The line 'Beauty is truth, truth beauty" comes from this Keats poem, which describes the title object as a "still unravish'd bride of quietness."
ANSWER: "**Ode on a Grecian Urn**"
[10] This Keats poem begins "a thing of beauty is a joy forever" and depicts the title shepherd's encounter with Cynthia.
ANSWER: **Endymion**

19. One story by these people tells of Hunahpu and Xbalanque (shuh-buh-lawn-kay), who defeated the rulers of Xibalba (shuh-BALL-buh) at the ballgame. For 10 points each:
[10] Name this Mesoamerican culture, whose scripture, the Popul Vuh, contains that story.
ANSWER: Quiche **Maya**
[10] Hunahpu and Xbalanque were heroes that had this special familial relation. In Greek myth, this relation was shared by Castor and Pollux, and Heracles and Iphicles.
ANSWER: **twin** brothers [prompt on **brothers**]
[10] One of these animals told Hunahpu and Xbalanque of their heritage and destiny. In Chinese myth, one crossed a river on the back of an ox, then jumped off to become the first animal in the Zodiac.
ANSWER: **rat**

003-09-4-15219

20. Over a quarter-million troops were involved in this battle, which saw the death of Prince Bagration. For 10 points each:
[10] Smoke on the battlefield prevented Kutuzov's loss from being worse than it was at what 1812 battle, fought seventy miles west of Moscow in unsuccessful defense of the city?
ANSWER: Battle of **Borodino**
[10] Borodino proved to be a pyrrhic victory for this French emperor, who lost large amounts of soldiers while retreating from the Russian winter. He was later defeated at Waterloo.
ANSWER: **Napoleon** Bonaparte [or **Napoleon** I]
[10] Napoleon's invasion of Russia marked the final reversal of the Treaty of Tilsit, which Napoleon had signed at a meeting on a boat with this Russian tsar.
ANSWER: **Alexander I** [or **Aleksandr Pavlovich**; prompt on **Alexander**]

019-09-4-15220

21. This character reveals that he is really Prince Dakkar at the conclusion of The Mysterious Island. For 10 points each:
[10] Name this character who takes Dr. Aronnax to Atlantis and Antarctica as the pilot of the Nautilus.
ANSWER: Captain **Nemo**
[10] This French novelist of Around the World in Eighty Days wrote about Captain Nemo in Twenty Thousand Leagues Under the Sea.
ANSWER: Jules **Verne**
[10] In The Mysterious Island, Captain Nemo is killed by one of these events, which causes Axel and Professor Lindenbrock to return to the Earth's surface in Journey to the Center of the Earth.
ANSWER: a **volcanic eruption** [accept clear-knowledge equivalents]

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