

1. **Reversible adiabatic processes hold this quantity constant, and the Carnot cycle consists of expansions and compressions that keep either temperature or this quantity constant. For monoatomic ideal gases, this value is calculated by the Sackur-Tetrode equation.** (*) Maxwell's Demon is able to decrease this value without expending work. The Second Law of Thermodynamics suggests that this value has an "arrow of time," because it always increases over time. For 10 points, what amount of energy unable to perform work is the measure of disorder in a system?

ANSWER: entropy

034-09-10-01102

2. **One phase of this battle was Operation Stosser, a failed paratrooper attack on the Baraque Michel Crossroads. An offensive by the 1st SS Panzer Division resulted in the Malmedy Massacre during this event. The sieges of St. Vith and (*) Bastogne occurred during it.** In Bastogne that Anthony McAuliffe responded to a demand for surrender during this battle with the one-word reply "Nuts!" For 10 points, the Germans failed to reach the Meuse River in which 1944 offensive, named for the indentation that was created in the Allied line?

ANSWER: Battle of the Bulge

040-09-10-01103

3. **This term was first coined by Cora Dubois and further elucidated in a 1954 lecture given by Kalervo Oberg. Oberg noted that symptoms of this malady include the "tropical stare," "excessive concern over drinking water," and a "terrible longing to be back home." Oberg further noted that in this condition, "the (*) environment has not changed. What has changed is [one's] attitude towards it."** For 10 points, give this term referring to the disorientation and eventual disgust one feels upon having to live in a new human environment.

ANSWER: culture shock

003-09-10-01104

4. **In this film, an eyeless dealer sells a drug called "Clarity." Colin Farrell plays a mustachioed, gum-chewing investigator who is gunned down by this movie's antagonist. The protagonist seeks out (*) Leo Crow, who was hired to pretend that he kidnapped and killed the protagonist's son Sean. Agatha is one of the "precogs," who foresees murders before they happen in, for 10 points, what Steven Spielberg-directed film starring Tom Cruise as a Precrime detective?**

ANSWER: Minority Report

026-09-10-01105

5. **In one story by this author, Julian accompanies his bigoted mother, Mrs. Chestney, on an integrated bus. This author wrote a novel in which Enoch Emery steals a mummy from a museum while working with the preacher Hazel Motes. This author of (*) "Everything that Rises Must Converge" and *Wise Blood* wrote a short story in which the Grandmother takes her family to Red Sammy's Diner before being killed by the Misfit. For 10 points, name this exemplar of the Southern Gothic style who wrote "A Good Man is Hard to Find."**

ANSWER: Mary Flannery O'Connor

045-09-10-01106

6. **The west pediment of the Temple of Zeus at Athena shows this god in the center of a scene depicting the Lapith women being abducted by centaurs. Praxiteles depicted this god leaning against a tree-trunk, about to kill a lizard in a depiction of him as (*) "Sauroktonos." Leochares depicted this god extending his left hand, from which dangles his cape, in the "Belvedere" sculpture of this god. For 10 points, name this figure who was sometimes depicted standing on the Omphalos, a sacred navel-stone near this god's Oracle at Delphi.**

ANSWER: Apollo

026-09-10-01107

7. **Under this President, the Force Acts were used to prosecute Ku Klux Klan members. He used the slogan "Let us have peace" in his campaign against Horatio Seymour. This President's secretary, Orville Babcock, was indicted for participating in the (*) Whiskey Ring. This President was in power during the Panic of 1873 and headed the second half of Reconstruction. For 10 points, name this man whose two White House terms were plagued by corruption, tarring the reputation he had earned as the victorious Union commander in the Civil War.**

ANSWER: Ulysses Simpson Grant

032-09-10-01108

8. **This quantity is the conjugate variable of position. The de Broglie (duh BROY) equation sets wavelength equal to Planck's constant divided by this quantity. This quantity, unlike kinetic energy, is (*) conserved regardless of whether a collision is elastic or inelastic. This quantity is symbolized with a lowercase p. For 10 points, name this vector quantity found by multiplying mass and velocity.**

ANSWER: linear momentum [do not accept or prompt on "angular momentum"]

026-09-10-01109

9. **This philosopher expressed his concern for the humans, not the horses, who survived a stable fire. This man claimed that reciprocity was the single best word to live by, thus formulating his Silver Rule. This compiler of the (*) *Spring and Autumn Annals* formulated the ideas later taught by Mencius. He described benevolence as *li* and created an ethics centered on *ren*. He advocated the "mandate of heaven," and collected his teachings in the *Analects*. For 10 points, name this Chinese thinker whose school opposed Daoism.**

ANSWER: Confucius [or Kong Fuzi (KONG-foo-tsee)]

020-09-10-01110

10. **One of this author's poems notes that the laurel "withers quicker than the rose." This author urged "Give crowns and pounds and guineas, but not your heart away" in his poem "When I was One and Twenty." This poet of "To an (*) Athlete Dying Young" also wrote of a man who "eats his victuals fast enough." That poem by this author also states that "malt does more than Milton can to justify God's ways to man." For 10 points, name this poet of "Terence, this is stupid stuff," which is found in his collection *A Shropshire Lad*.**

ANSWER: Alfred Edward Housman

026-09-10-01111

11. **The beginning of this country's independence was the "Cry of Ipigranga." The gradual end of slavery in this country was declared in the Law of the Free Womb. Soon afterwards, the Golden Law entirely ended slavery here. One president of this country was named (*) Getúlio Vargas (zhe-TOO-lee-oh VAHR-gahs). This country's first emperor was the expatriate Pedro I. For 10 points, name this country, that was discovered by Pedro Cabral for Portugal, and is the largest country in South America.**

ANSWER: Federative Republic of Brazil [or Republica Federativa do Brasil]

023-09-10-01112

12. **A scar on this man's thigh from a wound suffered during a boar hunt leads his servant and childhood nurse Euryclea (you-RIH-klee-uh) to recognize him. Sacrifices of the sacred cattle of Helios led to a disaster, of which this man was the only survivor. He pretended to be named (*) "no man" in order to blind the Cyclops Polyphemus (pall-uh-FEE-mus). This man's dog Argos died upon seeing him return from Troy after ten years to defeat his wife Penelope's suitors. For 10 points, name this king of Ithaca and hero of a namesake epic.**

ANSWER: Odysseus [or Ulysses; or Ulixes]

032-09-10-01113

13. **This painter depicted treasures lining the floor and soldiers stabbing writhing concubines as a monarch in white and gold reclines on a bed in his *The Death of Sardanapalus*. This artist also executed a work that includes dead revolutionaries on the ground and a boy waving two (*) pistols. Central to that painting is a bare-breasted woman who holds a musket in one hand and the tricolored French flag in the other. For 10 points, name this French painter of *Liberty Leading the People*.**

ANSWER: Eugene Delacroix (del-uh-CWAH) [or Ferdinand Victor Eugene Delacroix]

032-09-10-01114

14. **The largest part of this organ is divided into Brodmann areas. One part of this organ, the substantia nigra, produces dopamine; that part, like its striatum, is part of the basal ganglia. Those components are implicated in (*) Parkinson's disease and Huntington's disease. The lobes of one part of this organ include the occipital and parietal, and this organ includes a portion involved in motor control called the cerebellum. For 10 points, name this central organ of the nervous system, contained in the cranium.**

ANSWER: brain

022-09-10-01115

15. **This man led a legion of the navy during the Uruguayan Civil War. He objected to the granting of Savoy and Nice (NEECE) to France under the terms of the Treaty of Villafranca, which contributed to his dislike of (*) Camillo Cavour. The annexation of the Kingdom of the Two Sicilies by Sardinia resulted from this man's Expedition of the Thousand. For 10 points, name this figure of the Risorgimento (ree-SOR-jee-MEN-toh) who led the Red Shirts as part of his campaign to unify Italy.**

ANSWER: Giuseppe Garibaldi

032-09-10-01116

16. **Along with a bordering area of its northeastern neighbor, this state's southern counties form the cotton-growing "Little Dixie" region. The North Canadian River flows past its capital, and the Arkansas River goes through its second-largest city, the home of (*) Oral Roberts University. It has counties named for both Delaware and Texas, the latter of which joins Beaver and Cimarron to form a notable geographic feature of this state. Large universities here are located at Stillwater and Norman. For 10 points, name this state that features a western panhandle and Tulsa.**

ANSWER: Oklahoma

019-09-10-01117

17. **One part of this work focuses on Prince Qamar (KAH-mar), who uses magical keys to fly a mechanical ebony horse. In the frame story of this work, one character collaborates with her sister Dunyazad to prolong her marriage to King Shahryar. Every evening in this work, that character breaks off her (*) stories of such characters as Ali Baba and Aladdin to prevent her execution. For 10 points, name this collection of stories that are told by Scheherazade (shuh-HERR-uh-zod).**

ANSWER: *The Arabian Nights' Entertainments* [or *The Thousand and One Arabian Nights*; or *Alf layla wa-layla*; accept anything reasonable that mentions both nights and either the number 1001 or some form of the word Arabian or both]

004-09-10-01118

18. **This composer used the viola d'amore in *Juditha Triumphans*, one of his three oratorios. He composed a set of twelve concerti including *The Hunt and Storm at Sea*, which was entitled *The Contest Between Harmony and Invention*. His most famous works are accompanied by (*) sonnets that feature a "lamenting shepherd," "chattering teeth" and imitation bird calls. That work has four concertos, including *La Primavera* and *L'inverno* (lin-VAIR-no). For 10 points, name this Baroque Italian creator of the *Four Seasons*.**

ANSWER: Antonio Vivaldi

063-09-10-01119

19. **One way of approximating this method involves using graphed values to determine the midpoint of the height of a rectangle. A similar approximation of it can be done by setting equally spaced y-values of a graphed function as the heights of a (*) trapezoid. When given upper and lower limits, this method is described as being definite. This operation's indefinite form is the same as the antiderivative. For 10 points, name this operation of calculus that can be represented by the area under a curve and which is the opposite of derivation.**

ANSWER: integration [or integrals]

023-09-10-01120

20. **This figure tricked Alvis out of marrying his daughter by questioning him until he turned into stone. This son of the giantess Jord rides in a chariot drawn by a pair of goats, whom he eats and resurrects when he's hungry. This husband of (*) Sif is fated to die after taking nine steps while battling the serpent Jörmungandr (YOUR-mun-gand-er) at Ragnarok. This god wields the hammer Mjölnir (muh-YOHL-neer), which shoots lightning bolts. For 10 points, name this red haired son of Odin, the Norse god of thunder.**

ANSWER: Thor [or Donner or Donar; or Thunaraz]

059-09-10-01121

21. **This author wrote "we thought it was the Judgment day" during "that night your great guns, unawares, shook all our coffins as we lay" in his poem "Channel Firing." Boldwood shoots and kills Sergeant Troy in this man's novel about Bathsheba Everdene, set in (*) Wessex. In another of this author's novels, the title character leaves after Richard Newson returns to claim his daughter, Elizabeth-Jane. For 10 points, what author of *Far From the Madding Crowd* wrote about Michael Henchard in *The Mayor of Casterbridge*?**

ANSWER: Thomas Hardy

034-09-10-01122

1. Bragg's law describes this behavior as it results from interactions between atoms and X-rays. For 10 points each:

[10] Identify this bending of waves around obstacles.

ANSWER: **diffraction**

[10] Airy disks appear when diffraction occurs through an aperture of this shape, as opposed to slit or grating apertures.

ANSWER: **circle** [or **circular** aperture]

[10] This number, equal to focal length over diameter, helps describe the limiting factor of diffraction in real-world applications like shutter speed and the human eye.

ANSWER: **f**-number

032-09-10-01201

2. This country is the only independent state that completely lies above 1,400 meters in elevation. For 10 points each:

[10] Name this African nation with capital at Maseru. It is notable for being entirely surrounded by its only neighbor, the much larger South Africa.

ANSWER: Kingdom of **Lesotho**

[10] While South Africa has three capitals, this largest city in the country is not one of them. This city, the capital of Gauteng province, recently contacted Rudolph Giuliani for assistance in lowering its crime rate.

ANSWER: **Johannesburg**

[10] This other landlocked African nation is bordered by South Africa and Mozambique and is located at South Africa's eastern tip. According to the CIA, it has the highest HIV infection rate in the world.

ANSWER: Kingdom of **Swaziland** [or Umbuso we**Swatini**]

052-09-10-01202

3. The protagonist listens to a recording from box three spool 5, made by himself thirty years ago. For 10 points each:

[10] In what work is the protagonist, the only character of the play, a sixty-nine year old clown with an obsession for bananas?

ANSWER: **Krapp's Last Tape**

[10] In this work, written by the same author of *Krapp's Last Tape*, Pozzo becomes blind and Lucky becomes dumb between Act I and Act II. Vladimir and Estragon do not move at the end of this play.

ANSWER: **Waiting for Godot**

[10] This Irish playwright of the the Theatre of the Absurd, who wrote in both French and English, wrote both *Krapp's Last Tape* and *Waiting for Godot*.

ANSWER: Samuel Barclay **Beckett**

034-09-10-01203

4. He formulated five principles of inductive reasoning in the 1843 book *A System of Logic*. For 10 points each:

[10] Name this philosopher, also the author of *The Subjection of Women*.

ANSWER: John Stuart **Mill**

[10] This J.S. Mill text details the "Harm principle" and advocates for individual and economic freedoms.

ANSWER: ***On Liberty***

[10] A section titled "General Remarks" opens this Mill work, which is titled for the school of philosophy developed by Jeremy Bentham, which preaches the "greatest good for the greatest number."

ANSWER: ***Utilitarianism***

040-09-10-01204

5. This event began on June 2, 1780, when a crowd bearing a petition marched on Parliament. For 10 points each:

[10] Name this week of unrest in England, which was named for the eccentric member of the House of Lords who led the mob in killing over five hundred.

ANSWER: the **Gordon Riots**

[10] The Gordon Riots began in opposition to a "Relief Act" allowing members of this religion to serve in the British military. Henry VIII had previously broken England away from this denomination.

ANSWER: **Catholic** Church [or **Catholicism** or other word forms or obvious equivalents]

[10] The Catholic Relief Act was an attempt by this Tory prime minister, in power for almost the entire American Revolution, to garner more troops to fight the rebelling colonies.

ANSWER: Fredrick, Lord **North**

019-09-10-01205

6. In 1895, this ballet's choreography was revised into its present form by Marius Petipa and Lev Ivanov. For 10 points each:

[10] Name this ballet about Prince Siegfried, who attempts to lift a curse placed on Odette by the sorcerer Von Rothbart.

ANSWER: ***Swan Lake*** [or ***Lebidenoye Ozero***]

[10] This Russian composed *Swan Lake*.

ANSWER: Pyotr Ilych **Tchaikovsky**

[10] Rudolf Nureyev made his Western debut by dancing in this Tchaikovsky ballet about Aurora, who marries Prince Florimund after he awakens her with a kiss.

ANSWER: *The **Sleeping Beauty*** [or ***Spyashchaya Krasavitsa***]

004-09-10-01206

7. The narrator of this work discusses his liver problem and toothache before examining the statement "two plus two makes four." For 10 points each:

[10] In what short novel does the narrator visit the prostitute Liza after being mocked at Zverkov's farewell party?

ANSWER: **Notes from Underground** [accept *Zapiski iz podpol'ya*]

[10] This Russian author wrote many philosophical novels like *Crime and Punishment*, *Brothers Karamazov*, and *Notes from Underground*.

ANSWER: Fyodor Mikhaylovich **Dostoyevsky**

[10] In this Dostoyevsky work, Prince Myshkin hesitates between his compassionate love for Nastassya and romantic love for Aglaya.

ANSWER: The **Idiot**

034-09-10-01207

8. This element's main ore is refined by the Bayer process. For 10 points each:

[10] Name this metallic element symbolized Al.

ANSWER: **aluminum**

[10] The Bayer process creates alumina on the way to the pure metal from this ore that is commonly found in Europe and Jamaica.

ANSWER: **bauxite**

[10] This process is used to smelt alumina into aluminum by dissolving it in molten cryolite.

ANSWER: **Hall-Heroult** process

032-09-10-01208

9. This instrument has a chalumeau (shall-you-MOW) range, and it performs what used to be written for the basset horn. For 10 points each:

[10] Identify this single-reed, black woodwind instrument commonly found in its B-flat variety, also common in jazz music.

ANSWER: **clarinet**

[10] This composer of a clarinet concerto also wrote a "Jupiter" symphony and "Prague" symphony and the opera *The Marriage of Figaro*.

ANSWER: Wolfgang Amadeus **Mozart**

[10] Fellow composer Franz Sussmayr (SOOS-my-er) completed this D minor composition of Mozart's, a setting of the Latin mass for the dead.

ANSWER: **requiem**

032-09-10-01209

10. This Romanov ruler introduced the Table of Ranks and upset the boyars by ordering all officials to shave their beards. For 10 points each:

[10] Name this reform minded Russian czar who ruled from 1682 to 1725.

ANSWER: **Peter the Great** [or **Peter I**]

[10] Peter lost at Narva but went on to win at Poltava during this war against Sweden.

ANSWER: **Great Northern** War

[10] The Great Northern War was ended by this 1721 treaty between Russia and Sweden.

ANSWER: Treaty of **Nystad**

015-09-10-01210

11. Answer these questions about a work of economics, for 10 points each.

[10] This 1776 work includes a section on the division of labor which uses the example of a pin factory as an illustration.

ANSWER: *An Inquiry into the Nature and Causes of the **Wealth of Nations***

[10] *The Wealth of Nations* was written by this Scotsman who also wrote *The Theory of Moral Sentiments*.

ANSWER: Adam **Smith**

[10] Smith argues for a laissez-faire approach to economics using this metaphor, which describes how competition and self-interest naturally guide the capitalist marketplace.

ANSWER: **invisible hand**

024-09-10-01211

12. He claims to be descended from Babieca, the steed of El Cid. For 10 points each:

[10] Name this broken-down horse, who forms a bond with Dapple, the donkey of Sancho Panza.

ANSWER: **Rocinante**

[10] Rocinante and Sancho Panza appear in this Miguel de Cervantes novel about a deluded man who tries to emulate the tales of chivalry in his library.

ANSWER: *The Ingenious Hidalgo **Don Quixote** (kee-HO-tay) of la Mancha* [or *El ingenioso hidalgo **don Quixote** de la Mancha*]

[10] Early in the novel, Sancho Panza finds Quixote hacking at these edifices with a sword, under the belief that they are giants.

ANSWER: **windmills**

019-09-10-01212

13. The parietal cells in this organ produce the intrinsic factor, which allow for the absorption of vitamin B12. For 10 points each:

[10] Name this organ important in digestion.

ANSWER: **stomach**

[10] The stomach and the small intestine are separated by the "pyloric" (pie-LOR-ick) kind of these structures, which contract and relax to allow one-way motion of fluid or, in this case, chyme.

ANSWER: **sphincters** [prompt on **valves**]

[10] The chief cells produce a precursor to this digestive enzyme, a component of gastric acid. Because it needs a low-pH environment to function, it is activated by hydrochloric acid.

ANSWER: **pepsin**

034-09-10-01213

14. In an early Edward Hopper painting, one of these objects emits yellow smoke, which is mirrored by the yellow ground. For 10 points each:

[10] Name these objects, one of which is depicted emerging from the mist and heading toward the viewer in Joseph Turner's *Rain, Steam and Speed*.

ANSWER: **trains** [accept equivalents like **locomotives**]

[10] This man painted a train coming out of a fireplace in his painted *Time Transfixed*. He also painted a man in a bowler hat with a green apple for a face in his *Son of Man*.

ANSWER: Rene Francois Ghislain **Magritte**

[10] In *The Treachery of Images*, Magritte depicts one of these objects above a caption stating that "This is not" one of these objects.

ANSWER: a **pipe**

003-09-10-01214

15. The one named for Morrill deepened the regional division between the North and the South. For 10 points each:

[10] Name these revenue-raising device, a tax on imported goods?

ANSWER: **tariff**

[10] This tariff had the highest rates in American history and is often blamed for deepening the Great Depression. Hoover refused to veto the bill despite petitions from thousands of economists.

ANSWER: **Smoot-Hawley** Tariff [or **Hawley-Smoot** Tariff]

[10] The "abominable" Tariff of 1828 was central to the Nullification Crisis, and prompted this prolific South Carolina senator to issue an "Exposition and Protest."

ANSWER: John Caldwell **Calhoun**

034-09-10-01215

16. This activity became legal in New Hampshire as of January 2010, but was rejected by voters on Election Day 2009 in Maine. For the stated points:

[10] For 10, name this activity, which is on track to be allowed in Washington, D.C. but was rejected by the New York legislature in 2009.

ANSWER: **same-sex marriage** [or **gay marriage** or other obviously equivalent answers; do not accept or prompt on "marriage"]

[10] For 10, on Election Day 2008, California voters approved this ballot initiative, which re-prohibited gay marriage in that state.

ANSWER: Proposition **8**

[5/5] New Hampshire is now the fifth state where gay marriage is recognized. For 5 points each, name any two of the other four.

ANSWER: **Iowa**, **Connecticut**, **Vermont**, **Massachusetts** [5 for each correct answer, order not important, disregard any answers after the first two]

019-09-10-01216

17. Name these former French presidents, for 10 points each:

[10] This president signed the Comprehensive Test Ban Treaty in 1995, and France rejected the Constitution of the European Union during his second term. He was succeeded by Nicolas Sarkozy.

ANSWER: Jacques **Chirac** [shur-ROCK]

[10] This socialist president lost two elections to De Gaulle and was succeeded by Chirac. He introduced the 39 hour workweek and often worked with Edouard Balladur.

ANSWER: Francois **Mitterand** [mitt-er-OND]

[10] After the resignation of the De Gaulle, this man beat interim president Alain Poher in 1969. During his administration, France launched the Arienspace program, and he died in office in 1974.

ANSWER: Georges **Pompidou**

005-09-10-01217

18. This prophet will return as a harbinger of the "great and terrible day of the Lord." For 10 points each:

[10] Name this Old Testament prophet who ascended to heaven in a fiery chariot.

ANSWER: **Elijah** [accept **Elias**; or **Eliyahu**; or **Ilyas**; or **El-i Jahu**]

[10] Jesus became radiant and spoke with Moses and Elijah during this event of the Synoptic Gospels.

ANSWER: the **Transfiguration** [of Jesus or Christ]

[10] Elijah also tells of this man's coveting of the vineyard of Naboth, whom this king murdered at the behest of his treacherous wife Jezebel.

ANSWER: **Ahab** [or **Ach'av**; or **Achab**]

026-09-10-01218

19. It is the only satellite in the Solar System with its own magnetosphere. For 10 points each:

[10] Name this Galilean moon that is about the size of Mercury. It is the largest moon in the Solar System.

ANSWER: **Ganymede**

[10] This reddest object in the solar system was the last visually discovered satellite and namesake of a faint gossamer ring around a gas giant planet.

ANSWER: **Amalthea**

[10] Ganymede and Amalthea are both moons of this planet, the largest in the Solar System.

ANSWER: **Jupiter**

002-09-10-01219

20. In one work by this author, the narrator "dies for beauty, but [is] scarce adjusted in the tomb." For 10 points each:

[10] What "belle of Amherst" also wrote that the brain is "just the weight of God" and described "tast[ing] a liquor never brewed?"

ANSWER: Emily Elizabeth **Dickinson**

[10] Dickinson described this concept as "the thing with feathers that perches in the soul," a bird that sings in the chilliest land and the strangest sea.

ANSWER: **Hope**

[10] One of Dickinson's best-known poems begins with the line "Because I could not stop for" this figure, who takes a carriage ride with the narrator and immortality.

ANSWER: **Death**

034-09-10-01220

21. This leader argued that African-Americans should pursue technical educations instead of classical ones in a speech that became known as the Atlanta Compromise. For 10 points each:

[10] Name this author of *Up From Slavery*, who was appointed as the first president of Tuskegee University.

ANSWER: Booker Taliaferro **Washington**

[10] This African-American leader criticized Washington's disregard of a classical education in his book *The Souls of Black Folk*. He promoted the idea of a "talented tenth" of elite African-Americans.

ANSWER: William Edward Burghart (W. E. B.) **DuBois**

[10] DuBois served as the first editor of this organization's magazine *The Crisis*. It grew out of the Niagara movement, and from 1931 to 1955, it was led by Walter White.

ANSWER: **N**ational **A**ssociation for the **A**dvancement of **C**olored **P**eople

004-09-10-01221