

## Tossups

1. **The number of these entities possessed by a kinematic chain is given by the Chebyshev-Grubler-Kutzbach criterion. In chemical engineering, a type of analysis named for these entities is used to determine whether a system is over- or underdetermined. Kinematic coupling is a method of fixing all of these. The fact that a map from the torus to the sphere ceases to be covering at the zenith and nadir is the mathematical basis for the loss of one of these things in one phenomenon; (\*) that phenomenon, in which two of these mathematical entities couple to one another in a gyroscope, is called gimbal lock. Rigid bodies generally have six of these. Each of these things contributes ½ times Boltzmann's constant times temperature at equilibrium to the total energy by equipartition theorem. For 10 points, give this name for the number of parameters of a system that may independently vary.**

ANSWER: degrees of freedom [or modes] <EM>

2. **This poem claims that "the sea is a form of ridicule" and that "the iceberg settings satirize / The demon that cannot be himself". It includes the image of an "old fantoche" observing the "banal suburb" of Oxidia and an expression of the desire "that I may reduce the monster to / Myself, and then may be myself". Its final section says that we will remember "the moments that we choose to play / The imagined pine, the imagined jay". This poem's speaker asks "What is there in life except one's (\*) ideas?", imagines himself as "a shadow hunched" above the title object, and laments that he "cannot bring a world quite round". In the first of this poem's 33 sections, the title "shearsman of sorts" is asked to play a tune "of things exactly as they are". For 10 points, name this Picasso-inspired Wallace Stevens poem about a musician.**

ANSWER: "The Man with the Blue Guitar" <RC>

3. **One government in this country collapsed after the Peasant Armament Support March and the Courtyard Crisis. The Midsummer Crisis led to its *permittenttrafik* policy. This country allowed the Extradition of the Balts. One diplomat from this country was killed by the Stern Gang during the 1948 Arab-Israeli war while serving as the UNSC mediator; that diplomat negotiated the White Bus system that saved 15 000 (\*) Jewish inmates by moving them to this country. German war industry was dependent on the iron ore of this country, whose righteous among the nations include Raoul Wallenberg and should include Folke Bernadotte. Most Danish Jews were evacuated across the Sound by boat to this country. For 10 points, name this Scandinavian country that was neutral during both world wars.**

ANSWER: Kingdom of Sweden [or Konungariket Sverige] <PL>

4. **Max Reger's only complete piece of this type is a setting of a Friedrich Hebbel poem. Two sopranos and a baritone repeatedly sing "Selig sind die Toten, die in dem Herren sterben" to interrupt the "Nunc Dimittis" in Schütz's example of this type of work, his *Musikalische Exequien*. A prominent example of these works ditches the violins for its first movement, which contains the rising three-note motif F, A, B-flat. That example of these works features a beautiful soprano solo in its fifth movement "Ihr habt nun Traurigkeit", which follows the forceful fourth movement drawn from (\*) Psalm 84, "Wie lieblich sind deine Wohnungen". That example eschewed Latin texts in favor of the Luther-translated bible, and was written in response to the death of its composer's friend, Robert Schumann, and his mother. For 10 points, name these pieces of mourning that include Brahms's "German" one.**

ANSWER: German requiems [or Lutheran requiems; or non-liturgical requiems; or German funeral masses] <CV>

5. **This philosopher wrote that what he called the "first class of objects for the subject" could not be represented without the "union of Time and Space." This thinker believed that, while other forms of art are too concerned with human forms, music is the direct articulation of the basis of life and should be atop a hierarchy of the arts. This thinker critiqued the method of symmetrical analogy in his criticism of the schemata of (\*) Kant, whose idea of *ding-an-sich* he rejected. This man, whose dissertation elaborated on principles of causality, drew upon the Upanishads in a work that proposes denying the will-to-life through asceticism to escape omnipresent suffering. For 10 points, name this man who discussed the "fourfold root" of the principle of sufficient reason, a pessimistic dude who penned *The World as Will and Representation*.**

ANSWER: Arthur Schopenhauer <WA>

6. This thinker wrote that people might apply an intuition called a “keying” to intuit the difference between a real fight and a fictional fight, as they assess a “strip” of experience. In one book, he described how dark, strategic, and inside secrets are kept by “teams” engaged in collusion. In a paper, this man described how an “avoidance process” gives way to an interchange whose four steps are challenge, offering, acceptance, and thanks. He did his early field work in the Shetland islands, two decades before writing “On (\*) Face-Work.” This man used the metaphor of a clothes-peg on which various suits can be hung, and the distinction between “front stage” and “back stage” behavior, as part of his “dramaturgical” model of interaction. For 10 points, name this author of *Frame Analysis*, a sociologist who argued that we are little more than what we perform in *The Presentation of Self in Everyday Life*.

ANSWER: Erving Goffman <MJ>

7. Kelly’s lemma states that for a continuous one of these entities, the forward-time stationary distribution and the reverse-time stationary distribution are identical. Kolmogorov’s criterion is used to determine whether these constructs are reversible, and if every sub-component of these entities is aperiodic and positive-recurrent, they are called ergodic. The Metropolis-Hastings algorithm and Gibbs sampling are examples of algorithms that attempt to construct one of these with an equilibrium distribution equal to the (\*) sampling probability distribution; those algorithms are named for both Monte Carlo and *these* entities. A classic example of one of these is the drunkard’s walk, in which each end state is absorbing. For 10 points, name these constructs described by a transition matrix, in which the probability of going to any state depends only on the present state.

ANSWER: Markov chain [or Markov processes] <EM>

8. Later additions to this play include a scene in which the plea “Make me curse, make me rave, make me cry, make me mad, make me well again” is addressed to a painter by a character who then delivers a speech beginning “Vindicta mihi!” A character in this play writes a letter in her own blood to the protagonist, whose wife Isabella commits suicide. This play’s antagonist arranges the deaths of the servants Serberine and (\*) Pendringano. The ghost of Don Andrea and the personification of Revenge serve as the chorus in this play, which climaxes at a performance of *Soliman and Perseda*, where Lorenzo and Balthazar are murdered by Bel-Imperia and Hieronimo, thus avenging the death of Horatio. For 10 points, name this bloody precursor to *Hamlet*, a play by Thomas Kyd.

ANSWER: *The Spanish Tragedy*, or *Hieronimo is Mad Again* <RC>

9. According to Suetonius, a man called Favor hired for one of these events honouring Vespasian expressed shock that it cost ten million sesterces and said that it should be much cheaper since it could be held in the Tiber. The *novendialis* festival occurs after these events that the Twelve Tables generally prohibited from ending inside the *pomerium*. For aristocratic families, the (\*) heir of the central figure of these events gave a speech on the rostra and mimes would wear *imagines* or masks of the central figure’s notable ancestors to imitate them. The *Laudatio Iulae Amitae* linking the ancestors of the widow Gaius Marius to the goddess Venus was delivered at one of these events. For 10 points, name these events, one of which ended in the Liberators being driven out of Rome after Mark Antony read the will of Julius Caesar.

ANSWER: Roman funerals [or Roman burials; Roman funeral orations; or Roman funeral processions; funus; or funera; prompt on “oration” and “procession” and variants thereof] <PL>

10. In one hadith, this figure is said to have not laughed since the fire was created, while in another context this figure gives Solomon the ring that he uses to control demons. Jehovah’s witnesses and Seventh-Day Adventists believe this person is the same as Jesus. This figure intervenes in a 21 day battle between one of his allies and the Prince of Persia. This figure would often argue with (\*) Samael as the defender of Israel, and in the Catholic tradition he is often depicted holding scales, which he uses to weigh the souls of the dead. This patron of the first chivalric order in France and the fascist Iron Guard in Romania is given the title “Archistrategos” or “Supreme Commander of the Heavenly Host” in Eastern Orthodoxy. For 10 points, name this Archangel that commands the armies of heaven in the Book of Revelation.

ANSWER: Michael [or Mikhael] <EM>

11. This state's Rattlesnake Hill in the town of Redstone quarried rocks used to build the Library of Congress and the Willey family tragedy attracted many artists to its Conway Valley. Lonesome Lake and Greenleaf are high-altitude huts in this state located near glacial tarns atop Mount Lafayette and Franconia Ridge, which are operated by the Appalachian Mountain Club throughout its (\*) Presidential Range. Crawford Notch was a popular painting subject in this state whose southern lowlands contain the isolated granite monolith of Mount Monadnock. Its Lake Winnepesaukee drains into the Merrimack River from the White Mountains. Theodore Roosevelt hosted negotiations to end the Russo-Japanese War in this state, which is bordered on its west by the Connecticut River. For 10 points, identify this state home to Portsmouth, whose largest city is Manchester and whose capital is at Concord.

ANSWER: New Hampshire <CC>

12. An office banner in this film shows the text "We will defend to the death our right to be misinformed" under the slogan "First to Go, Last to Know." This film, based on Gustav Hasford's quasi-memoir *The Short Timers*, uses exaggerated slow-motion during Eightball's death, and includes a scene where several men wrap bars of soap in towels to beat up a shamed colleague. A main character in this film tries to express "the duality of man" and "the Jungian thing" by wearing both the words "Born to (\*) kill" and a peace sign on his uniform. In this film, the Lusthog Group, led by Animal Mother, laughs after a female sniper is mercy-killed by Private Joker, a few weeks after a desperate prostitute makes the overture "Me love you long time" to graduates of Gunnery Sergeant Hartman's obscene drill instruction. For 10 points, name this Stanley Kubrick film set among Marines during the Vietnam War.

ANSWER: Full Metal Jacket <MJ>

13. A 10% solution of this substance is used to assay for flavonoids in a namesake test. The lysis buffer in plasmid preparation kits contain around 0.2N of this substance. The anhydrous form of this substance is used to catalyze the transesterification of methanol and triglycerides in the formation of biodiesel. A hot solution of this substance is used to wash bauxite in the first step of the Bayer process. Along with chlorine gas, this substance is produced from the electrolysis of brine in the (\*) chloralkali process. Dividing the Koettstorfer number by 1.403 gives the number of equivalents of this substance needed to break down one gram of fat. Stock solutions of this substance are typically stored at 10N. This substance is commonly used to cleave esters in saponification, and it is also found in drain cleaners. For 10 points, name this strong base, which formula NaOH.

ANSWER: sodium hydroxide [or caustic soda; or NaOH until it is read] <EM>

14. The opening chapter of a novel by this man features a conversation between representatives of the p.i.t.m., the p.o.t.r., and the p.o.t.l. One of his characters repeats a maxim ending "let us do everything in our power not to live entirely like animals". A late novel by this man gives the name "Constant" to a character that was previously known as the "dog of tears". The old man with the eyepatch and the girl with the (\*) dark glasses hook up in one of his novels, while the plot of another is set into motion when 83% of the voters in an election turn in blank ballots. The scissors-stabbing of a sadistic man eventually leads to the burning of an asylum used for quarantine in this author's most famous novel, in which the doctor's wife is the only person not to suffer the title epidemic. For 10 points, name this author of *Seeing*, a sequel to his 1995 hit *Blindness*.

ANSWER: Jose Saramago [or Jose de Sousa Saramago] <RC>

15. The Primera Junta was established in this city following the conclusion of the first of a series of revolutionary 19<sup>th</sup> century *cabildos abiertos*. William Brown immigrated to this city and led forces from it during an 1845 blockade. The viceroy Baltasar Hidalgo de Cisneros was overthrown in this city. Hundreds of people were killed when right-wing snipers opened fire on left-wing factionists at an airport during the Ezeiza massacre of (\*) Montoneros in this city, which is where the May Revolution took place. Mothers of kidnapped children protested in front of the Casa Rosada in this city, where the working-class "shirtless ones" or *descamisados* met in the Plaza de Mayo. This city was home to the governments of Leopoldo Galtieri and Jorge Videla, and it was where Adolf Eichmann was captured in 1960. For 10 points, name this city from which Juan Perón led Argentina.

ANSWER: Buenos Aires <WA>

16. This man forgot to blow out the frozen flames of his lanterns during one winter, causing a gigantic brushfire in the spring. This man accidentally threw a hatchet at his dog, but managed to sew his back legs back on upside-down. One animal owned by this figure was so ravenous that he required 200 cooks to feed him at all times; that animal died after he ate a stove. As a baby, this figure would scare the local fish and frogs with his wails, and it required five (\*) storks to deliver him. During the "Year of the Blue Snow", this man found his most notable companion. This man created Mount Hood when he smothered his campfire with rocks, and also created the Grand Canyon while dragging his axe behind him. For 10 points, name this friend of Babe the Blue Ox, a gigantic lumberjack from American folklore.

ANSWER: Paul Bunyan <EM>

17. Late in life, this person had a ship called the *Lord Sheffield* and was a merchant in Saint John, New Brunswick until he left after false accusations of burning down his own store. In 1781, this general raided Richmond, Virginia and New London, Connecticut, which he razed during his tactical victory at the Battle of Groton Heights, which failed to redirect troops from (\*) Yorktown. This general made an arduous 1775 march through Maine to join Richard Montgomery in attacking Quebec City, where his leg was shattered. He was stripped of command by Horatio Gates despite preventing Burgoyne's flank attack at Freeman's Farm during the Battle of Saratoga, a slight which partially led to his plans to hand over West Point. For 10 points, name this general who switched to the Loyalist cause in the American Revolution.

ANSWER: Benedict Arnold <PL>

18. In one painting showing this figure at the top left, Saturn reaches down to lift a feminized Veritas to heaven while this figure is handed a wreath symbolizing *concordia* by her son. In another painting, Jupiter and Juno gaze down from clouds towards a man who rests on a cane while gazing at a painting of this figure, who is shown bending over to write in a painting where the three nude Graces stand to her right. In another painting, nudes gaze up from the water as this figure walks on a red carpet towards a man in a blue cape decorated with the (\*) *fleur-de-lis*, while a man in black armor watches from the left. *The Triumph of Truth* is the final painting in a cycle about the life of this woman that includes paintings about her *Education* and her *Disembarkation at Marseilles*. For 10 points, name this French queen about whose life Peter Paul Rubens created a cycle of paintings.

ANSWER: Marie de Medici [prompt on partial answer] <WA>

19. An autoimmune disease of this organ is characterized by antibodies to selenium transferase and is associated with anti-smooth muscle antibodies. A cancer of it can be caused by aflatoxin. Backflow in this organ can cause the appearance of caput medusae, and this organ's outflow is blocked in Budd-Chiari syndrome. Angiotensinogen, C-reactive protein, and fibrinogen are all produced in this organ. Feathery degeneration and ballooning degeneration are two forms of apoptosis undergone by this organ's (\*) namesake cells, many of which are multinucleated. Kupffer cells are the resident macrophages of this organ, which also contains fenestrated blood vessels called sinusoids. The functional unit of this organ consists of a namesake triad of an artery, a vein, and a duct, and this four-lobed organ is fed by the portal vein. For 10 points, name this organ damaged in cirrhosis.

ANSWER: the liver <EM>

20. In the prologue to one of this man's plays, an actress is enjoined to sing about summer to please the audience by the Stage Director. The title character of another of his plays is rescued from being transformed into a vine by her love interest, a mortal king for whom she had previously written a love poem on a birch leaf. This author wrote a poem in which an exiled servant of the god of luck tells the title character of the beauty of a journey to the city of (\*) Alaka in order to convince it to convey a communique to his wife. In the most famous play by this author of *Urvashi Won by Valour*, a fisherman's discovery of a lost signet ring in a fish allows the title character to defeat Durvasa's curse and reconcile with her husband Dushyanta. For 10 points, name this early Sanskrit-language author of "Cloud Messenger" and *The Recognition of Shakuntala*.

ANSWER: Kalidasa <RC>

## Bonuses

1. These people are usually depicted as a bunch of Japanese pirates and their activity did increase during the Sengoku period, but they were from a diversity of East Asian backgrounds. For 10 points each:

[10] Give this term, meaning “dwarf bandits,” collections of East Asian raiders who ravaged the Chinese coast in the 15<sup>th</sup> and 16<sup>th</sup> centuries. The Joseon targeted these people with the Gihae Eastern Expedition.

ANSWER: wokou [or wako; or waegu]

[10] *Wokou* raids ranged as far south as this large non-European city on the Pearl River, where the later pirate Zheng Yi Sao ran a brothel after retiring. Arab and Persian pirates ransacked this city in an 878 massacre here.

ANSWER: Guangzhou [or Canton; or Kwangchow; do NOT accept “Quanzhou”]

[10] This Chinese dynasty was the first one that had to deal with mass *wokou* raids. Its other anti-pirate activities include sending Zheng He to crush pirates in Southeast Asia during his voyages.

ANSWER: Ming dynasty [or Empire of the Great Ming; or Da Ming Di Guo] <WA>

2. In *La Morte D'Arthur*, this figure sparks a blood feud after killing King Lot of Orkney, and in another story this man kills Griflet after Miles asks for vengeance for his master. For 10 points each:

[10] Name this father of Percival who once breaks King Arthur's sword in a series of three jousts.

ANSWER: Pellinore

[10] Pellinore is best known for spending almost all of his time hunting after this creature, which has the head of a snake, body of a leopard, feet of a deer, and hindlegs of a lion.

ANSWER: Questing Beast

[10] The sword broken by Pellinore is the sword Arthur pulled from the stone. In contrast, Excalibur, in most accounts, is the sword given to Arthur by this figure.

ANSWER: the Lady of the Lake <EM>

3. This poem, which relates a legend that first appeared in Clemens Brentano's lay “Zu Bacharach am Rheine”, describes a figure who “combs her golden hair” and “sings a song, passing time”. For 10 points each:

[10] Name this 1822 poem in which the “dulcet-voiced power” of the title woman causes the waves to “devour / both boat and man, by and by”.

ANSWER: “The Lorelei” [or “Die Lorelei”]

[10] “The Lorelei” was written by this lyric poet of *Atta Troll*, whose *Buch der Lieder* was a popular source for Romantic composers looking to set poems.

ANSWER: Heinrich Heine [or Christian Johann Heinrich Heine]

[10] Heine mocks the society that spent hundreds of years constructing Köln Cathedral, describes being stalked by an axe-carrying “special devil”, and visits Frederick Barbarossa in a dream in various parts of this satirical epic.

ANSWER: Germany: A Winter's Tale [or Deutschland. Ein Wintermärchen; prompt on partial answer] <RC>

4. A particularly interesting solution to these equations can be found by following the projection of the Hopf fibration in three-dimensional space. For 10 points each:

[10] Name these notoriously difficult-to-solve equations from fluid mechanics, which describe viscous flows.

ANSWER: Navier-Stokes equations

[10] The  $\mathbf{v} \cdot \nabla \mathbf{v}$  term in the Navier-Stokes equation is named for this process, which can form Benard cells if occurring above a horizontal heated plate. This process moves heat by bulk fluid motion.

ANSWER: convection

[10] The derivation of the Navier-Stokes equations relies on this useful result, which states that the time derivative of the integral over a region of some function  $f$  is equal to the integral over that same region of  $df/dt$  plus an integral around the boundary of the region of velocity dot normal times  $f$ .

ANSWER: Reynolds transport theorem <EM>

5. One of this musician's most famous trademarks was developed on accident when the dancers Stump and Stumpy fell on his instrument. For ten points each:

[10] Name this jazz musician, known for his trumpet bent at a 45-degree angle and for puffing out his cheeks while playing. His songs include "Salt Peanuts" and "Manteca."

ANSWER: John Birks "Dizzy" **Gillespie**

[10] Gillespie collaborated with this man on the album *New Jazz Sounds*. This man is best known for winning a Grammy for his cover of Duke Ellington's "Prelude to a Kiss." His songs include "When Lights are Low" and "Blues in my Heart."

ANSWER: Benny **Carter**

[10] At the Monterey Jazz Festival, Carter performed with this musician, who was nicknamed "Lady Day." She became known for her recording of the songs "Strange Fruit" and wrote the song "God Bless the Child."

ANSWER: Billie **Holiday** <JC, ed.>

6. Answer some questions about methods for screening for protein-protein interactions, for 10 points each:

[10] A common method of screening for protein interaction patterns is the two-hybrid assay, which is often carried out in this model organism. This model organism's common name is baker's yeast.

ANSWER: **Saccharomyces cerevisiae** [or **S. cerevisiae**]

[10] The gold standard for determining whether two proteins interact with each other is running in both ways the "co-" version of this procedure where an antibody is added to a mixture to pull a molecule of interest out of solution.

ANSWER: **immunoprecipitation** [or **IP**]

[10] The WSXWS motif is a common protein-protein interaction domain in the receptors for these signalling molecules, which are associated with lymphocyte activation and examples of which include interleukin-1 and other interferons.

ANSWER: **cytokines** <EM>

7. According to the Abingdon Chronicle, this man ordered his monk-craftsman Spearhafoc to make him an imperial crown, but Spearhafoc ran away with the jewels and gold instead. For 10 points each:

[10] Identify this member of the house of Wessex whose accession to the throne was encouraged by Godwin and whose wife Edith commissioned a favorable history of him. He also rebuilt St. Peter's Abbey and Westminster Abbey.

ANSWER: **Edward the Confessor** [prompt on "Edward" and "St. Edward"]

[10] Edward appears enthroned in the first scene of this work of art that includes a depiction of Halley's Comet as well as Harold Godwinson receiving an arrow in his eye at the Battle of Hastings.

ANSWER: the **Bayeux Tapestry**

[10] Numerous references to "vasta" or "waste" in the Domesday Book testify to this destructive campaign William the Conqueror led in Yorkshire from 1069 to 1070, designed to ferret out rebels as far as the River Tees.

ANSWER: the **Harrying of the North** <SJ, ed.>

8. Treating different enharmonic "spellings" as the same, there are only three distinct transpositions of this scale, whose name was coined by American composer Arthur Berger. For 10 points each:

[10] Name this type of non-diatonic, symmetric musical scale, in which there is an exact alternation between half steps and whole steps.

ANSWER: regular **octatonic** scale [or symmetric **diminished** scale]

[10] This composer of *Turangalila-Symphonie* considered the octatonic scale to be the "second mode of limited transposition," and used it in his *Quartet for the End of Time*.

ANSWER: Olivier **Messiaen**

[10] According to scholar Pieter van der Toorn, this composer of *Symphony of Psalms* made heavy use of octatonic sonorities, including in the "Petrushka chord" and several sections of *Rite of Spring*.

ANSWER: Igor **Stravinsky** <MJ>

9. A character in this novel lives on Martin Poyser's dairy farm in Hayslope and, as a result of an affair with Captain Donnithorne, has an illegitimate child who she abandons in a field. For 10 points each:

[10] Identify this novel in which that character, Hetty Sorrel, and Dinah Morris are the two love interests of the title carpenter.

ANSWER: **Adam Bede**

[10] *Adam Bede* is the first novel by this pseudonymous author of *Middlemarch* and *Silas Marner*.

ANSWER: George **Eliot** [or Mary Ann **Evans**]

[10] F.R. Leavis advocated chopping out the Judaism-focused sections of Eliot's novel *Daniel Deronda* to leave a better novel titled for this character, who angers Lydia Glasher by marrying Henleigh Grandcourt out of desperation.

ANSWER: **Gwendolen** Harleth [or Gwendolen **Harleth**]

10. As of September 2014, this state has the lowest unemployment rate in the United States at 2.8%. For 10 points each:  
[10] Identify this state whose Bakken and Three Forks formations contain extensive deposits of shale oil that has led to an economic boom despite controversy over flaring and fracking practices.

ANSWER: North Dakota

[10] This city at the center of the oil boom is the namesake for the basin containing the oil shale deposits and in February 2014 was found to have the highest apartment rental prices in the United States.

ANSWER: Williston

[10] This other state has experienced a shale oil boom based around the Eagle Ford Formation, which stretches from Gonzales to just north of Laredo. This state's oil industry is governed by its powerful Railroad Commission.

ANSWER: Texas <CC>

11. This man re-interpreted the Reconstruction era as a time of unprecedented popular democracy that led to the long-term establishment of public schooling in his *Black Reconstruction in America*. For 10 points each:

[10] Identify this intellectual and founding member of the NAACP who wrote *The Souls of Black Folk* and encouraged the development of the "talented tenth" of black Americans.

ANSWER: William Edward Burghardt "W.E.B." Du Bois

[10] Du Bois defended the NAACP's perceived failure to defend this Alabama group of nine black men falsely accused of rape in 1931. Their Communist lawyers screwed up by purchasing clothes for Ruby Bates and trying to bribe Victoria Price.

ANSWER: Scottsboro Boys [or Scottsboro Nine]

[10] DuBois had a long feud with this NAACP executive director in the 1930s who passed as a white man when investigating the Elaine Riots. This man's book *A Rising Wind* helped convince Truman to desegregate the military.

ANSWER: Walter Francis White <CC>

12. Adding a methyl group to this compound creates xylene, and it smells like paint thinner. For 10 points each:

[10] Name this aromatic molecule which contains a benzene ring with a single methyl group. Adding three nitro groups to this molecule creates a dangerous explosive.

ANSWER: toluene [prompt on "methylbenzene" for IUPAC hardliners]

[10] Heating toluene with AIBN and NBS leads to benzyl bromide. That reaction proceeds through one of these intermediates, which is also the intermediate in the UV-catalyzed bromination of alkanes.

ANSWER: free radicals

[10] Some isotoluenes, which have an exocyclic double bond, can isomerize via this reaction, in which an alkene with an allylic hydrogen reacts with another multiple-bond-having molecule, then undergoes a 1,5 hydrogen shift.

ANSWER: Alder ene reaction

13. An example of this type of religion in Finland is the Suomenusko movement. For 10 points each:

[10] Festivals such as Winternights and Blots are among those celebrated by religions of this type with Germanic origins, such as Forn Sed, Asatru, and Wotanism.

ANSWER: Neopaganism [or Modern paganism; or Contemporary paganism; prompt on "polytheistic," "pantheism," and "animism" because most neopagans religions have those elements; anti-prompt on "Neo-Germanic" or "Neo-Nordic"]

[10] A famous example of neopaganism is based on these historical priests, who used golden sickles to cut mistletoe off oak trees. A number of them lived on the island of Anglesey.

ANSWER: Druids [or druides; or Neodruidism; or the Druwi movement]

[10] Like the Druwi movement, this neopagan religion was inspired by the Prussian Lithuanian poet Vydas as its founder. It is often symbolized by a six-branched world tree called the Austras Koks.

ANSWER: Romuva <PL>

14. Rollo May and Paul Tillich introduced this kind of therapy to help patients develop the courage to deal with anxiety and take responsibility for their actions. For 10 points each:

[10] Identify this type of therapy that Irvin Yalom argues should have the patient view the therapist as a "fellow traveler" in confronting the four givens of life: isolation, meaninglessness, mortality, and freedom.

ANSWER: existential therapy

[10] This author of *Man's Search for Meaning* employed existential therapy principles to develop his own logotherapy. His attempt to gauge purpose was improved on by Crumbaugh and Maholick in their "Purpose in Life" test.

ANSWER: Viktor Frankl

[10] Frankl's approach was derived from his experiences surviving this historical event. This event influenced later psychology studies like Milgram's obedience experiments to explain the actions of concentration camp guards.

ANSWER: The Holocaust <CC>

15. This poem notes that the “eyes of nations” eagerly watch the “scales” of an ongoing war as “in their hopes Columbia’s arm prevails” and “Anon Britannia droops the pensive head.” For 10 points each:

[10] Name this poem which regales the title commander as “first in peace and honors,” asking “Thy every action let the Goddess guide.”

ANSWER: “To **His Excellency, George Washington**”

[10] This female poet wrote “To His Excellency, George Washington.” She rationalized her enslavement because it taught her “That there’s a God” in “On Being Brought from Africa to America.”

ANSWER: Phyllis **Wheatley**

[10] This later African-American author, himself a fugitive slave, addressed slavery in his novel about a mixed-race daughter of the U.S. President, *Clotel*. He shares most of a name with the author of *The Power of Sympathy*.

ANSWER: William Wells **Brown** [or William Hill **Brown**] <MJ>

16. In *The Powers of Horror*, this idea is likened to a man who has loathed food and thus gags when his lips touch the surface of milk. For 10 points each:

[10] Name this concept, elaborated by Julia Kristeva, in which an individual has to come to think of himself or herself as a base and vile object.

ANSWER: **abjection** [or word forms]

[10] The writings of Kristeva are taken as the starting point in this philosopher’s treatise which argues that gender is performative, entitled *Gender Trouble*.

ANSWER: Judith **Butler**

[10] This other writer and erstwhile lover of Jean-Paul Sartre argued that throughout history, women have been turned into the “other” in her book *The Second Sex*.

ANSWER: Simone de **Beauvoir** [or Simone Lucie Ernestine Marie Bertrand de **Beauvoir**] <Ike>

17. The Siamese princes Chao P. and Kri arrive to study at the Peers School in this novel, which focuses on a character who blackmails Shigeyuki Iinuma in order to continue his affair with Satoko. For 10 points each:

[10] Identify this novel about Kiyoaki Matsugae, who on his deathbed tells Shigekuni Honda “I’ll see you again”. It is the first novel in the *Sea of Fertility* tetralogy.

ANSWER: **Spring Snow** [or **Haru no Yuki**]

[10] The *Sea of Fertility* tetralogy was written by this Japanese author of *Temple of the Golden Pavilion*, who became obsessed with bodybuilding and right-wing politics before committing seppuku in 1970.

ANSWER: Yukio **Mishima** [or Kimitake **Hiraoka**; accept either name in either order]

[10] In this Mishima novel, Shinji Kubo falls in love with the pearl diver Hatsue Miyata, though the lighthouse keeper’s daughter Chiyoko schemes to separate them.

ANSWER: *The* **Sound of Waves** [or **Shiosai**]

18. Due to the unique layout of the stars depicted on this diagram, parts of it have been assigned colorful names like the “main sequence”, “horizontal branch”, and “instability strip”. For 10 points each:

[10] Name these diagrams with vertical axes of luminosity and absolute magnitude, horizontal axes of spectral class and color, and on which are plotted an *assload* of stars.

ANSWER: **HR** diagram [or **Hertzsprung-Russell** diagram]

[10] Because a star’s luminosity is related to its surface area and temperature, anyone, even Chris Ray, can calculate this quantity given said measurables and the Stefan-Boltzmann equation, where it’s squared.

ANSWER: **radius** [or **R**]

[10] All of a star’s properties can be determined from its chemical composition and mass according to this unproven but widely accepted theorem. It’s the reason stars fall into groups on the HR diagram, and thus the only reason HR diagrams are of any use at all.

ANSWER: **Russell-Vogt** theorem



19. A 1972 Paul Schroeder article called this war as “Gallopig Gertie” and blamed its outbreak on British foreign policy. For 10 points each:

[10] Name this war, which Niall Ferguson decried in *The Pity of War*. Its first month is the subject of Barbara Tuchman’s *The Guns of August*. Sean McMeekin wrote about its preceding crisis in *July 1914*.

ANSWER: **First World War** [or **World War One**; or **Great War**; or the War of **’14-’18**]

[10] A thesis named for this technology in A.J.P. Taylor’s *War by Timetable* argues that the complex and inflexible war plans of the Great Powers led to a rush to strike first because of the cult of the offensive and the value of this technology in faster mobilization.

ANSWER: **railways** [or **railroad**; or equivalents such as **trains**]

[10] This German historian’s namesake thesis pointed to Bethmann-Hollweg’s September Program and the 1912 Imperial German War Conference as proof that Germany aggressively pursued war before July 1914.

ANSWER: Fritz **Fischer** [or **Fischer** thesis] <PL>

20. This technique is also referred to as “direct painting.” For 10 points each:

[10] Name this type of painting, which must be executed quickly and is frequently used for watercolor paintings. This technique is typically done in one sitting, as demonstrated live by Bob Ross on TV.

ANSWER: **wet-on-wet** painting [or painting **alla prima**; or painting **au premier coup**]

[10] This painter used wet-on-wet painting during the dying hours of the evening while creating *Carnation, Lily, Lily, Rose*. He controversially showed Virginie Gautreau in a black dress in *Portrait of Madame X*.

ANSWER: John Singer **Sargent**

[10] Sargent portrayed this author looking at the viewer as his disinterested wife lies on a couch at the right, looking away. In 2004, the portrait sold for \$8.8 million to Steve Wynn, who planned to hang it in a casino.

ANSWER: Robert Louis **Stevenson** <WA>