

1. A list of these objects is often made when calculating the Shapley–Shubik power index. These objects can be visualized using Rothe diagrams, and a method of representing them is called two-line notation. An algorithm named for Fisher and Yates creates a random one of these objects. A derangement is one of these objects in which no items are fixed. The number of these objects for n items taken r at a time equals n factorial divided by the quantity n minus r factorial. For 10 points, name these arrangements of items in which order matters, unlike combinations.

ANSWER: permutations

2. One character in this work is cared for by a medicine woman known as “M’Dear,” and dies while eating peach cobbler. Aside from Auntie Jimmy, other characters in this work include the prostitutes Maginot Line, China, and Poland. In this work, Claudia and Frieda sacrifice money they were saving for a bicycle in order to plant marigold seeds in the hope that an unborn child will not die if they bloom. Most of this work’s chapters are titled after passages from *Dick and Jane*. The protagonist of this work is raped by her father Cholly, which causes her to believe that she has acquired a long sought-after quality. Pecola Breedlove desires to be white and possess the titular feature in, FTP, what novel by Toni Morrison?

ANSWER: *The Bluest Eye*

3. These entities can be defined by their “affective valence” according to the theories of Kurt Lewin. The Affect Infusion Model provides various processing schema to explain how these affect how people handle various situations. Carl Lange and William James independently developed theories that these are physiological responses generated by the autonomic nervous system, not spiritual or mental states. FTP the AIM model characterizes what types of feelings, examples of which include fear, happiness, and love?

ANSWER: emotions (prompt on “feelings” before said, or on “mood”)

4. This man referred to his nemesis as “the one who wears perfume.” Two separate armies in pursuit of this man fought each other at the Battle of Carrizal. During one battle, Alvaro Obregon tricked this man’s troops into retreating by having his own bugler call for a retreat. This loser at the Battle of Celaya had earlier served as Governor of Chihuahua. This leader of the Division del Norte raided Columbus, New Mexico in response to the USA’s recognition of Venustiano Carranza as President. John J. Pershing led an unsuccessful Punitive Expedition against, FTP, what Mexican general and revolutionary?

ANSWER: Francisco “Pancho” Villa

5. In a two-part episode of this show entitled “A Long Walk to Pittsburgh,” a character is allowed to stay with her Aunt Prudence after her parents move away. The wrestler Vader appeared on an episode of this show, which was set at Pennbrook University during its last two seasons. This show, which was part of ABC’s TGIF lineup, included the nerdy character Minkus as well as Angela and Shawn, who had an interracial relationship. A recent spin-off of this show stars Rowan Blanchard as Riley, whose dad is a history teacher at her middle school. For 10 points, name this show that starred William Daniels and Ben Savage as Mr. Feeny and Cory Matthews.

ANSWER: *Boy Meets World*

6. A painting by Edward Moran depicts the "unveiling" of this structure, and Edouard de Laboulaye [*lah-boo-LAY*] proposed the idea for it. Richard Morris Hunt designed the truncated pyramid pedestal for this sculpture, and Gustave Eiffel designed its internal framework. Broken chains and shackles lie at the feet of this sculpture, whose title figure holds a tablet in her left arm and wears a crown. For 10 points, name this large copper sculpture designed by Frederic Auguste Bartholdi that is located in New York Harbor and depicts a woman holding a torch.

ANSWER: Statue of Liberty [or Liberty Enlightening the World]

7. The second section of this poem sees a speaker note, "I think we are in rats' alley/Where the dead men lost their bones." At the end of the first section the speaker quotes from "Au Lecteur" of *Fleurs du Mal* after calling London an "unreal city." Phlebas the Phoenician, "once handsome and tall as you," is described in its short fourth section, "Death by Water." Ending with a repetition of the Hindu word for peace, "shantih," is, FTP, what 1922 Modernist poem which begins, "April is the cruellest month," written by T.S. Eliot?

ANSWER: "The Waste Land"

8. A method of creating these objects allegedly involved a 30-minute treatment with low-pH medium according to Haruko Obokata, who retracted two papers regarding STAP, or the stimulus-triggered acquisition of them. The transcription factor Oct4 is expressed in these objects, which were derived from single blastomeres in a Robert Lanza experiment. The adult type of these objects can be harvested from bone marrow, and the embryonic type of these cells are pluripotent. For 10 points, name these undifferentiated cells that can give rise to specialized cells.

ANSWER: stem cells [accept specific types]

9. That this substance is not exactly the same as its chemical formula is argued in J. Van Brakel's "Chemistry as the Science of the Transformation of Substances," which notes that an individual molecule of it doesn't have this substance's observable qualities. In a thought experiment meant to support the idea of semantic externalism, the word denoting this substance is said to exist with exactly the same observable qualities as on earth, but to be composed of "XYZ" rather than its chemical components on Earth. Subject of Hilary Putnam's Twin Earth thought experiment, FTP what critical liquid was thought by Thales of Miletus to be the fundamental substance of the universe?

ANSWER: water

10. One holder of this political office wrote the book *Quit Digging Your Grave with a Knife and Fork* after losing 110 pounds while in this position. One person in this role cancelled the high school year of 1958 rather than allow racial integration, leading Eisenhower to call in the national guard to enforce desegregation in state schools. Another holder of this position was Jim Guy Tucker, who served time for his role in a fraud involving the Whitewater Development Corporation, unlike his predecessor in this role, who escaped Whitewater conviction while later serving as president. FTP Mike Huckabee and Orval Faubus held what political office, which was filled by Bill Clinton twice?

ANSWER: Governor of Arkansas

11. The Hindu deity Kartikeya uses one of these creatures as his mount, and in Hindu iconography this creature is often depicted killing a serpent. The chief angel of the Yazidi people, Melek Taus, is one of these birds. Krishna wears the feather of this bird in his headband. Two of these birds pulled the chariot of the Greek goddess of marriage, and one Greek story states this bird's plumage was originally decorated by the 100 eyes from the head of Argus Panoptes. FTP what blue bird was sacred to Hera?

ANSWER: peacock (accept "peafowl")

12. Optical path length equals the product of distance and this quantity, which is related to density and polarizability in the Lorentz-Lorenz equation. This quantity is approximately equal to the square root of the dielectric permittivity, and some metamaterials have a negative value for it. One is subtracted from this quantity in the lensmaker's equation. Values of it are needed to calculate Brewster's angle as well as the critical angle, above which total internal reflection occurs. This quantity equals 1.33 for water, and it can be calculated using Snell's law. For 10 points, name this quantity, the ratio of the speed of light in a vacuum to the speed of light in a certain medium.

ANSWER: index of refraction [or refractive index]

13. This state's Dworshak Dam has been blamed for the diminishing number of steelhead trout in the Clearwater River. A group of cone fragments called the Devil's Orchard are part of this state's Craters of the Moon national park, and this state's Lost River Mountain Range houses its highest point, Borah Peak. A body of water known as The River of No Return flows through this state's Sawtooth Valley. This state contains Shoshone Falls, as well as the Salmon and Snake Rivers. Cities in this state include Coeur d'Alene and Pocatello. Hells Canyon runs along this state's border with Oregon. FTP, name this "Gem State" with capital Boise.

ANSWER: Idaho

14. Herman Melville's poem "The Portent" describes this man's "streaming beard" and calls him the "meteor of the war." Lydia Marie Child wrote a poem about this man "and the Colored Child," depicting his kiss of an African-American child also shown in a Thomas Hovenden painting of this man on his way to his hanging. Russell Banks's novel *Cloudsplitter* uses this figure's son Owen to narrate his father's killing of five people at Pottawottamie Creek in Kansas. FTP a 19th-century marching song describes what abolitionist's body "a mouldrin' in the grave" after his execution for taking the arsenal at Harper's Ferry?

ANSWER: John Brown

15. One side in this war employed a light cavalry whose cries of "Cut them down!" led to them being called the Hackapells. One country entered this war following the Truce of Altmark, while another country involved in this war was led by Maximilian I, the Elector of Bavaria. This war's "Bohemian phase" was ended by the Battle of White Mountain. This war's Battle of Rain was fought between the Count of Tilly and a man who would later die at the Battle of Lutzen, Gustavus Adolphus. This war was triggered by the Second Defenestration of Prague. Fought between Catholic and Protestant forces, FTP, name this war ended by the Peace of Westphalia that lasted from 1618 to 1648.

ANSWER: Thirty Years' War

16. This composition premiered at an afternoon concert that Maurice Peress recreated 61 years later. The song "The Man I Love" shares a melodic fragment with this piece, in which a B-flat half note, the triplets A, G-flat, A / G-flat, A, G-flat, and the eighth notes F, E-flat, D, D-flat begin its ritornello theme. Commissioned by Paul Whiteman, this piece was orchestrated by Grofe [*GROH-fey*] and was conceived in 1924 on a train ride. Ross Gorman came up with the famous clarinet glissando that opens this piece. For 10 points, name this George Gershwin composition.

ANSWER: Rhapsody in Blue

17. The 1947 Hill-Burton Act provided federal funding for these institutions along with a charge that they provide free service if needed. Charles Rosenberg's history of these institutions credits their growth from the almshouses of the early 18th century. Thomas Bond and Benjamin Franklin created the first partially publicly funded example of one of these institutions in Philadelphia in 1752. The professionalization of nursing, coupled with urbanization after the Civil War, led to an explosion in the creation of these institutions. FTP what large buildings provide centralized health care?

ANSWER: hospitals

18. The main texts of this religion are preserved in purvas--the Agamas contain the teachings of the last of its 24 ideal spiritual figures, all of which are not governed by kashayas, or personal desires. Those 24 holy figures of this faith serve to help followers achieve moksha, or liberation from the cycle of death and rebirth, reflected in the origin of their name from words meaning “ford-builders.” Some Orthodox adherents of this religion sweep the floor before them to avoid stepping on insects. Divided into Svetambara and Digambara sects, FTP, what is this Indian religion that practices ahimsa, or the path of nonviolence?

ANSWER: Jainism

19. Peter Stewart believed that SID and the partial pressure of carbon dioxide in water can determine this quantity, which is plotted on the x-axis of a Pourbaix diagram. A glass electrode is used to measure this quantity, which is estimated in the Henderson–Hasselbalch equation. At high values of this quantity, the indicator phenolphthalein [*fee-nawl-THAL-een*] turns from colorless to pink. The compound Tris is used to resist changes in this quantity and is called a buffer. For 10 points, name this quantity that expresses the acidity or basicity of a solution, and is seven for water.

ANSWER: pH [or power of hydrogen]

20. One character with this profession reminds a character of his time at Clongowes Wood College, and gives that character a “deathchill” during his stint as a guest speaker at Belvedere College. Other characters with this profession include Restrepo from *The House of the Spirits* and Paneloux from Camus’s *The Plague*. Another character in this profession meets Coral Fellows and receives refuge from Maria, with whom he had fathered the child Brigitta. That character with this profession carries the epithet “Whiskey” due to his alcoholism. FTP, name this profession held by the main character of *The Power and the Glory*, and Father Arnall in *A Portrait of the Artist as a Young Man*.

ANSWER: priests

Delta Burke 2014
Round 8 Bonuses

1. Answer some questions about a monotheistic Middle Eastern religion FTPE.

[10] This faith focuses on the connectedness and unity of humankind. It considers Jesus, Muhammad, and Krishna as parts of a long line of holy messengers, and its holy text is the Book of Certitude.

ANSWER: Baha'i

[10] Baha'u'llah, the most recent Baha'i prophet, was taught by Siyyid Ali Muhammad, who took on this title which translates as "door" or "gate."

ANSWER: The Bab

[10] Baha'i originated in this modern-day country, where The Bab was born in Shiraz and Baha'u'llah was imprisoned in Teheran.

ANSWER: Iran

2. One side at this battle used Operation Lightfoot to avoid enemy mines around Miteriya Ridge. FTPE:

[10] Name this WWII battle fought in Northern Africa in which the Allies under Bernard Montgomery pushed back Axis forces.

ANSWER: 2nd Battle of El Alamein

[10] The Axis forces at El Alamein were led by this "Desert Fox," who was later put in charge of Germany's Atlantic Wall in the lead-up to D-Day.

ANSWER: Erwin Rommel

[10] Allied victory at El Alamein forced a German retreat to Tunisia, where they would surrender after the success of this Allied operation that called for an invasion of French North Africa.

ANSWER: Operation Torch

3. The title character of this work describes being born to Plutus and Youth, after which she is raised by Drunkenness and Ignorance. FTPE:

[10] Name this satirical text written as an oration given by the titular goddess, in which she claims that life would be dull without her.

ANSWER: *In Praise of Folly* (accept "The" instead of "In")

[10] *In Praise of Folly* was written by this Dutch humanist whose other works include *Handbook of a Christian Knight*.

ANSWER: Desiderius Erasmus

[10] Erasmus dedicated *In Praise of Folly* to this English philosopher, with whom he had lived. In this philosopher's most famous work, Raphael Hythloday describes the title country to Peter Giles, that work is *Utopia*.

ANSWER: Sir Thomas More

4. Sena Jeter Naslund wrote a 1999 first-person novel from the point of view of this fictional character's wife. FTPE:

[10] What master of the Pequod has a lightning-shaped scar on his face and nails a doubloon to the mast as prize for the first man to sight the white whale?

ANSWER: Captain Ahab

[10] Ahab's first mate in *Moby Dick* is this Quaker who continually fails to dissuade Ahab from his obsession with the whale.

ANSWER: Starbuck

[10] This other Melville title character is reluctantly hanged by Captain Vere for rashly killing Claggart.

ANSWER: Billy Budd (can give either name since it's character, not title)

5. This man's textbook *De humani corporis fabrica* contains illustrations made by members of Titian's studio, and was based on studies of dissected human cadavers. For 10 points each:

[10] Name this sixteenth century Flemish physician to Charles V and Philip II.

ANSWER: Andreas Vesalius [vi-SEY-lee-uhs]

[10] Vesalius is often known as the "father of" this branch of biology, which studies the shape and structure of organisms. In the name of a popular college course, it is followed by physiology.

ANSWER: anatomy

[10] Vesalius corrected many of the errors made by this second century physician, whose theories on human anatomy formed the basis of European medicine for over a thousand years.

ANSWER: Galen [or Galenus]

6. This opera, whose title means "Thus Do They All," contains the trio "Soave sia il vento," in which the singers request that the "wind blow gently and the waves be calm." For 10 points each:

[10] Name this opera that begins with Ferrando and Guglielmo disguising themselves as Albanians in order to seduce their girlfriends after Don Alfonso questions their trustworthiness.

ANSWER: Così fan tutte, ossia La scuola degli amanti [or K. 588; prompt on English title]

[10] *Così Fan Tutte* was composed by this Austrian, whose other operas include *The Abduction from the Seraglio*, *The Marriage of Figaro*, and *The Magic Flute*.

ANSWER: Wolfgang Amadeus Mozart

[10] The title character of this Mozart opera announces his plans to make love to at least ten new girls in the "Champagne Aria," but is eventually dragged to Hell by a statue of the Commendatore.

ANSWER: Il dissoluto punito, ossia il Don Giovanni [or K. 527]

7. Numerous American tribal people celebrate a female deity of this grain. FTPE:

[10] What grain grew in seven spots where the "yellow woman" bled according to a Creek myth?

ANSWER: corn or maize

[10] According to the Aztecs, corn was brought to man by this feathered serpent deity.

ANSWER: Quetzalcoatl

[10] Quetzalcoatl found the source of maize by following one of these creatures to it; in Greek myth Zeus created the Myrmidons from these creatures.

ANSWER: ants

8. This 1848 document purposely echoes the Declaration of Independence, even beginning with the phrase "When in the course of human events." FTPE:

[10] What document mostly written by Elizabeth Cady Stanton was signed by 100 attendees of a convention on equal rights for women?

ANSWER: Declaration of (Rights and) Sentiments

[10] The Declaration of Sentiments was produced at this convention for women's rights.

ANSWER: Seneca Falls Convention

[10] Seneca Falls, which calls itself the Gateway to the Finger Lakes, is in this state, which saw draft riots in the Civil War in its largest city.

ANSWER: New York

9. An equation named for Van Deemter calculates the height equivalent to a theoretical plate in this technique, which makes use of a stationary phase and a mobile phase. For 10 points each:

[10] Name this technique used in a chemistry lab to physically separate mixtures.

ANSWER: chromatography [accept specific types]

[10] A thermal conductivity detector can be used in this type of chromatography, in which a vaporized sample is carried by a mobile phase that is often hydrogen, helium, or nitrogen.

ANSWER: gas-liquid partition chromatography [or GC; or GLC; or GLPC] (cont'd next page)

[10] Another type of gas chromatography detector is named for this phenomenon, which ionizes solute molecules. A test named for this phenomenon produces a red color for sodium.

ANSWER: flame

10. This poet rhapsodized that “A thing of beauty is a joy forever.” FTPE:

[10] What poet of “La Belle Dame sans Merci” was eulogized by Percy Shelley in the poem “Adonais”?

ANSWER: John Keats

[10] The last lines of this Keats poem state “‘beauty is truth, truth beauty’ - that is all / Ye know on earth, and all ye need to know” as the persona looks at pictures on an old piece of pottery.

ANSWER: “Ode on a Grecian Urn”

[10] Keats also wrote a poem about first looking into this man’s translation of Homer, which begins “Much have I travell’d in the realms of gold”.

ANSWER: George Chapman

11. Art critic Julian Street described one of his paintings as "an explosion in a shingle factory." FTPE:

[10] Name this exponent of Dada who used two glass panels in his work *The Bride Stripped Bare by Her Bachelors, Even*, and who also painted *Nude Descending a Staircase, No. 2*.

ANSWER: Marcel Duchamp

[10] *Nude Descending a Staircase, No. 2* and *The Bride Stripped Bare by Her Bachelors, Even* are both located in this American city, which is also home to the Rodin Museum.

ANSWER: Philadelphia

[10] Marcel Duchamp created a work called *L.H.O.O.Q.*, which added a mustache and goatee to this famous Leonardo da Vinci portrait of a female with an enigmatic facial expression.

ANSWER: Mona Lisa [or *La Gioconda*; or *La Joconde*]

12. This novelist’s first completed work was a collaboration with William S. Burroughs titled *And the Hippos Were Boiled in Their Tanks*. FTPE:

[10] What author of *The Subterraneans* claimed to have coined the term “Beat Generation” from a conflation of “beaten down” and “beatific”?

ANSWER: Jack Kerouac

[10] Kerouac is best known for this novel in which he thinly fictionalizes himself as Sal Paradise, who has a tumultuous relationship with Dean Moriarty as they live much of the action in the title fashion.

ANSWER: On the Road

[10] This author of *Breakfast at Tiffany’s* quipped about Kerouac’s free-ranging style, “That’s not writing, it’s typing.”

ANSWER: Truman Capote

13. Running north-south, this is the longest mountain range in the world. FTPE:

[10] What mountains run from Peru south to near the tip of South America?

ANSWER: Andes Mountains

[10] The tallest point in the Andes is this highest point on earth outside of Asia.

ANSWER: Mount Aconcagua

[10] The peak of Mount Chimborazo, which due the equatorial bulge is the furthest place on the surface away from the center of the earth, is in this South American nation.

ANSWER: Ecuador

14. Answer the following about the electron transport chain, for 10 points each.

[10] The electron transport chain begins with FMN receiving electrons from this coenzyme. Complex I of the electron transport chain is sometimes called its namesake dehydrogenase.

ANSWER: NADH [or (reduced) nicotinamide adenine dinucleotide; don't accept "NAD+"]

[10] This molecule takes two protons along with the electrons it receives from cytochrome a-sub-three in Complex IV to make water. This molecule is often called the final electron acceptor.

ANSWER: (diatomic or molecular) oxygen [or O₂]

[10] The transfer of electrons releases energy that is ultimately used to produce this molecule. The phosphorylation of ADP occurs in its namesake synthase.

ANSWER: ATP [or adenosine triphosphate]

15. A book released in September, 2014, makes the not-particularly-new case that this economic system is incompatible with sustaining the environment. FTPE:

[10] What is this system in which a society's means of production are privately owned and run for profit?

ANSWER: capitalism

[10] That new book, *This Changes Everything: Capitalism Vs. the Climate*, is by this female Canadian author who attacked the rise of sweatshops and globalized capitalism in her 1999 book *No Logo*.

ANSWER: Naomi Klein

[10] In October, 2011, Klein addressed protesters in Zuccotti Park for this action initiated by Adbusters Magazine.

ANSWER: Occupy Wall Street

16. A member of this group held an off-the-record meeting with Fidel Castro on a boat off the Florida coast. FTPE:

[10] What was this body authorized by LBJ to investigate the Kennedy assassination, commonly known by the name of its chairman, the Supreme Court Chief Justice?

ANSWER: Warren Commission

[10] This Michigan House Rep was a member of the Warren Commission before becoming the only man to serve as VP and president without being elected to either position.

ANSWER: Gerald Ford

[10] Before serving as Chief Justice, Earl Warren was elected governor of this state three times.

ANSWER: California

17. Marina Silva became the Socialist Party candidate for president of this South American country after Eduardo Campos died in a tragic plane crash while campaigning. For 10 points each:

[10] Name this country where Dilma Rousseff recently won a runoff to remain president.

ANSWER: Brazil

[10] Some voters supported Rousseff mainly because of this two-word social welfare program, part of Fome Zero, which gives seventy reais [*rey-AHLZ*] a month to extremely poor families.

ANSWER: Bolsa Familia

[10] Brazil is a member of this acronym-named quintet of emerging countries, whose other members include South Africa, China, India, and Russia.

ANSWER: BRICS

18. In one novel by this author, the title hare-lipped gardener attempts to return his sick mother to her birth city of Prince Albert. FTPE:

[10] Name this author of *Life & Times of Michael K*, whose novel *Disgrace* tells of the downfall of professor David Laurie.

ANSWER: J(ohn) M(axwell) Coetzee

[10] Coetzee's novel *Foe* tells the story of this literary character from the perspective of a woman named Susan Barton. This character is shipwrecked off the coast of Venezuela, where he meets his companion Friday.

ANSWER: Robinson Crusoe

[10] J.M. Coetzee also created fictional writer Elizabeth Costello, whose novel *The House on Eccles Street* re-tells the events of this book from the perspective of Molly Bloom.

ANSWER: Ulysses

19. Answer the following about the physics of a kickoff in football, for 10 points each.

[10] Calculating the range of a kickoff requires the horizontal component of the initial velocity, which equals this value in meters per seconds for a football kicked at an angle of sixty degrees with an initial velocity of thirty meters per second.

ANSWER: fifteen meters per second [$30 \text{ m/s} * \cos(60) = 30 \text{ m/s} * 0.5 = 15 \text{ m/s}$]

[10] When the football reaches its maximum height after the kickoff, the *vertical* component of the velocity equals this value in meters per second.

ANSWER: zero meters per second

[10] You have twenty seconds for the following bonus part. Use ten meters per second squared as the acceleration due to gravity, and give your answer in meters. If the vertical component of the initial velocity equals twenty meters per second, calculate the height of the kickoff.

ANSWER: twenty meters [$V_y\text{-squared} = V_{oy}\text{-squared} + 2a*Y \rightarrow 0 - 20\text{-squared} / 2(-10)$]

20. Tribes of this people fought amongst themselves after Hongi Hika acquired advanced weaponry in the Musket Wars. FTPE:

[10] Name this people who signed the Treaty of Waitangi with William Hobson.

ANSWER: Maori

[10] The Maori are a people indigenous to this island country in Oceania. This country is divided into North and South islands, and has its capital at Wellington.

ANSWER: New Zealand

[10] Maoris led by Hone Toia got into a brief bloodless war with Britain for their refusal to pay a tax on these animals. The tax was enforced by making the natives buy collars for these animals.

ANSWER: dogs (or Dog Tax War)