

**The Brief Wondrous Tournament of WAO** - *Málà Yousufzai, served extra spicy*

**Editors:** Will Alston, Joey Goldman, James Lasker, Jason Cheng, Naveed Chowdhury, and Jonathan Luck, with writing assistance from Athena Kern and Shan Kothari.

Packet by Sarma/Horton + Swift/Newcombe + Ankit et al

## TOSSUPS

1. **The vocals from *Vergine Bella* accompanied a three-dimensional diorama by Janet Cardiff and George Miller that was inspired by a painting of this person. Vincenzo Catena's depiction of this person is noted for its unusual choice of showing him in pink and blue. A sculpture of this person by Nicolaus of Hogenau is flanked by an enthroned St. Anthony and depiction of Antony's temptation in the *Isenheim Altarpiece*. A partridge and a peacock stand on a ledge below a marble floor in a depiction of this man by (\*) Antonello da Messina. This man is shown sleeping on his back in a painting in which John the Baptist points behind himself towards the Virgin and Child; that painting by Parmigianino is titled for this person's *Vision*. A lion sleeps at the front of an engraving that shows this man writing at a desk. For 10 points, name this person depicted in *his study* by Dürer.**

ANSWER: St. Jerome <Edited>

2. **A Torsion-free metric connection must also have this property according to the Fundamental Theorem of Riemannian Geometry. Relations between convex polytopes and polyhedra in Euclidean metric space have this property by Alexandrov's theorem. Some differential equations whose solutions have this property can be solved by placing a synthetic source and mirroring it across a boundary. This method (\*) of images can be used due to a theorem that guarantees the solutions of Poisson's equations have this property. The quantifier for this property is an exclamation point preceded by a backwards capital E. A well posed problem must have a solution that exists and has this property. Prime factorization has this property according to the fundamental theorem of arithmetic. For 10 points, name this property of there being only one of something.**

ANSWER: uniqueness

3. **A magnificent statue of this non-Norse deity which had a gold and silver mustache was torn down less than ten years after its construction. The day of Thursday and the metal tin were both sacred to this deity, as was the oak tree, to which this deity's name is etymologically connected. This deity is symbolized by a hexagon with six interconnecting spokes, resembling a wheel or the ball-like shape of his main weapon, which he also wielded in the form of golden apples or as an (\*) axe. Similar to Thor, this god rode across the sky in a chariot pulled by a goat or bull. Every year, this god fights a battle over the theft of his cattle by Veles. Following the Christianization his worshippers, statues of this deity were dragged through the streets, beaten with sticks, and thrown in the Dnieper River. For 10 points, name this Slavic god of thunder and lightning.**

ANSWER: Perun [accept Perkunas until "apples"] <Edited>

4. **Funds from the 1895 Naval Works Loan Act were used to construct a dry dock in this place on a breakwater that contained the Devil's Tongue Battery. The Battle of Cape Spartel was fought after a successful resupplying of this place by Richard Howe during a campaign in which the attackers pioneered the use of floating batteries to bombard it and the defenders invented a "depressing gun carriage." During the American Revolution, this place was invested in a three year and seven month (\*) "great siege" by France and Spain. Prince George of Hesse and George Rooke commanded the forces of the Grand Alliance that captured this place in 1702; subsequently his territory was ceded in perpetuity along with Minorca by terms of the Treaty of Utrecht. For 10 points, name this fortified British overseas territory in the Iberian peninsula.**

ANSWER: Gibraltar <Edited>

5. The Milk River flows through this region's Writing-on-Stone park. Indigenous peoples in this region have such designations as "Peerless Trout," "Frog Lake," and "Ermine Skin." The southeastern part of this region contains the valley of the Red Deer River, a badland area that is a major center of research on dinosaur fossils such as those of styracosaur and dromaeosaurs. The Wildrose Party is a populist organization based in this governmental entity, which since 2015 has been led by Rachel Notley [NOTE-ley], a member of the (\*) New Democratic Party. May 2016 wildfires devastated the town of Fort McMurray, a center of the fossil fuel industry near this province's Athabasca Oil Sands. For 10 points, Banff National Park is located in what prairie province of Canada, the only province that adjoins both British Columbia and Saskatchewan?

ANSWER: Alberta <Edited>

6. For the blind glass armonica virtuoso Marianne Kirchgessner, this composer wrote an Adagio and Rondo for armonica and four other instruments. This composer transcribed his Serenade for Wind Octet in C minor into the second of his six string quintets, all of which have parts for two violins and violas. This composer wrote a collection of quartets which all have three movements while in Milan. The *adagio cantabile* cello parts of three of this composer's quartets were intended for a (\*) royal performer, king Friedrich Wilhelm II. He promoted the newly invented basset clarinet by composing a Clarinet Quintet in A major. This composer dedicated six string quartets, including "Spring" and "Dissonance", to his friend and mentor Joseph Haydn. For 10 points, name this composer of *Eine Kleine Nachtmusik*.

ANSWER: Wolfgang Amadeus Mozart

7. A doctor in this play angrily tells his coworker, "Don't think Kennedy and I didn't fight for you!" and that there "doesn't seem to be much difference between a wealthy Jew and a rich Gentile." In this play's fourth "vignette," a "Voice" from the audience warns everyone that Clayton is a corporate "rat." This play begins with an argument between Henry Fatt and (\*) Joe, who proclaims that he has decided to rally his coworkers at the behest of his wife Edna. Near the end of this play, Agate proclaims, "WE'RE STORMBIRDS OF THE WORKING CLASS," and the elected chairman of a union, whose whereabouts have been unknown for the entire play, is finally found "Behind the car barns with a bullet in his head!" For 10 points, name this play about a cab drivers' labor strike, written by Clifford Odets.

ANSWER: Waiting for Lefty

8. This structure is the site of most synthesis of a class of oxylipins containing characteristic cyclopentanone rings. The genomic region coding for this structure contain a core *matK* gene nested inside a *trnK* intron. Most jasmonate synthesis occurs in this structure, which contains a complex divided along a pseudosymmetric axis. A strong interacting dimer called "the special pair" is found in this structure, which contains (\*) LH1 and LH2 complexes. One complex containing calcium and manganese, sometimes called the OEC, is found in one structure within this organelle. That complex is responsible for the oxidation of water. A pigment containing a central magnesium atom present in these organelles found in thylakoids, which are organized into stacks called grana. For 10 points, name these double membrane bound organelles that are responsible for photosynthesis.

ANSWER: chloroplasts [accept thylakoid before "organelle"]

9. **Mosaics excavated from a large peristyle courtyard in this city's first government complex are displayed partially *in situ* under its Arasta market. Active investigations instigated by a subway project uncovered nearly 40 ships in this city's Harbor of Eleutherios. In this city, a now-burnt porphyry column contained a figure with Apollo carrying an orb. A stadium in this city contained an (\*) obelisk constructed by Thutmose III. This city's great palace complex of Blachernae contains an annex named for people who were considered "purple-born." The apse of the church of Kyriotissa in this city abuts the aqueduct which brought this city water from outside its double-line walls to the Basilica Cistern. For 10 points, the great Hippodrome was found in what capital of the Byzantine Empire?**  
ANSWER: Constantinople [accept Istanbul or Byzantium] <Edited>

10. **An essay about "The Idea of" this concept argued that a form of it grounded in respect can be understood by contrasting views of others from a technical and human perspectives. Gerry Cohen conceived this concept as an absence of hindrances for which people cannot be held responsible. As part of a consideration of luck's role in this concept, Ronald Dworkin's *Sovereign Virtue* describes this concept "of welfare" and "of resources" after asking "Does [this concept] Matter?" One work asserts that the *absence* [emphasize] of this quality from (\*) civil society resulted from the displacement of *amour-soi* for *amour-propre*, as well as the moment that a man placed a stick in the ground and demarcated private property; that work by Rousseau investigates the origins of this concept's opposite. For 10 points, name this concept that many conservative thinkers believe should manifest as opportunity, not outcome.**  
ANSWER: equality [or egalitarianism; do not accept or prompt on "inequality"; first clue is from Bernard Williams]

11. **Eric Hanushek's research, exemplified by a seminal 2012 paper titled for a certain "solution," emphasizes the connections between education quality and this concept. Work by Uzawa and Lucas that incorporated divisions into sectors helped kickstart research into the "new" theory of this phenomenon in the late 1980s. A 2000 paper by Kakwani and Pernia is responsible for making this concept's "inclusive" variety a buzzword in development economics. The new Chief Economist at the World Bank, Paul Romer, incorporated (\*) technology into the endogenous model of this phenomenon. According to the most commonly cited model of this phenomenon, it is determined in the short term by the shift in economic steady states caused by changes in the savings rate, labor force, and depreciation; that model is named after Solow and Swan. For 10 points, identify this concept that refers to an increase in GDP for an economy.**  
ANSWER: economic growth [accept endogenous growth; accept exogenous growth; prompt on GDP] <Edited>

12. **A Texan-born holder of this office dealt with fallout from allegations that cancer researcher Cornelius Rhoads had intentionally injected cancer cells into locals. In 1948, a holder of this office signed a law restricting anti-American activity called the "Gag Law." This office was held by James Beverly, as well as a sugar baron who redirected a surplus made possible by the removal of Catholic Church subsidies to lucrative contracts to buddies who ran timber companies; that man was Charles Herbert Allen. After a five-year stint as a holder of this office, (\*) Rexford Tugwell helped benefit his former constituents by advocating amendments to the the Jones Act. A recent holder of this position named Luis Fortuño strongly supports statehood, in contrast to activists who favor independence. For 10 points, identify this position, the highest executive in a U.S. territory with capital San Juan.**  
ANSWER: Governor of Puerto Rico <Edited>

13. A translation of this book by Enno Littmann was used in a study identifying patterns of framing in it by Mia Gerhardt. In a story by a different author, a character is interrupted while trying to read this book by laborers who toss balls of wadded bread at him, leading him to choose to enter a fatal knife fight. In this book, a man who travels fifteen days to get food for his wife later cuts her into pieces and puts the remains in a chest, since he assumes she had an affair when he sees that food in the hand of a (\*) slave. The character Juan Dahlmann is continually thwarted in his attempts to read this book in Borges' story *The South*. In this book, three days are given to a court official to solve the murder-mystery of "The Three Apples." Though it's not the Kama Sutra, a complete English translation of this work was made by Richard Burton. For 10 points, name this book of stories narrated to Shahryar by Scheherezade.  
ANSWER: *The Arabian Nights* [or *One Thousand and One Arabian Nights*; or *Kitab al-Layla wa Layla*]

14. In a daily ritual, this text is opened in the mornings and wrapped up for safekeeping at night. Correct recitation of this text is known as *shudh ucharan*. A series of *banis* from this text and a lesser-regarded companion text are recited daily in the ritual of *nitnem*, and the evening prayer drawn principally from this text is *rehiras*. Although he did not profess the religion that reveres this text, Kabir was a significant outside contributor to this text's contents, which are arranged in the form of (\*) *ragas*. Before its Japji section, this book opens with the basic prayer, or Mul Mantra. This book, which contains writings from six out of ten leaders of a religion, is written in the Gurmukhī script, and it always sits on a *takhat* because of an action performed by Gobind Singh prior to his death. For 10 points, name this holy book of Sikhism, which was elevated to the status of the eleventh and eternal guru.  
ANSWER: Sri Guru Granth Sahib [or Adi Granth] <Edited>

15. The COSNAR method estimates the contribution of resonances to the strength and stability of these compounds. Biphasic aqueous basic conditions are named for a reaction which forms these compounds from acid chlorides, the Schotten-Baumann reaction. Carboxylic acids, carbonyls, and isocyanides combine in aprotic solvents to form alpha-hydroxy versions of these compounds in the (\*) Passerini Reaction. These compounds form from oximes in strong mineral acids in the Beckmann Rearrangement. Attack of an amine group by the carboxylic acid of an amino acid results in the formation of a peptide bond which is one of these groups. For 10 points, name these compounds which contain a carbon double bonded to an oxygen and singly bonded to a nitrogen.  
ANSWER: amides [prompt on lactams since most of the important applications of the first few reactions are cyclic amides]

16. In this novel, a character pushes away a girl holding her apron strings, causing her to fall over and cut her cheek, thinking, "It is strange how ugly this child is." In a late-act death scene in this novel, a recurring sick, blind beggar is overheard singing about a woman whose "petticoat has flown away." During a county fair in this novel, a man's attempts at seduction are constantly interrupted by the announcement of awards, though he succeeds six months later by taking his target (\*) horseback riding. In this novel, translated in 2010 by Lydia Davis, a man weeps in a garden after mourning over his wife's suicide via arsenic and is found dead by their daughter Berthe. Earlier in this novel, that man and Monsieur Homais botch a clubfoot operation, killing Hippolyte. For 10 points, name this novel about the title woman's unhappy marriage to Charles, written by Gustave Flaubert.  
ANSWER: Madame Bovary

17. A 1998 exhibition at the Philadelphia Museum of Art introduced the public to Joseph Cornell's *Dossier* named for this artist. This artist created a primarily blue and black collage that includes a profile of George Washington called *Genre Allegory*. Walter Arensberg resigned from a group he founded with Joseph Stella due to a controversy surrounding this artist. Richard Hamilton used notes from *The Green Box* to recreate a two panel piece by this artist for the Tate Modern. This artist titled a (\*) snow shovel that he hung from the ceiling of his studio *In Advance of a Broken Arm*. This artist of *The Bride Stripped Bare by her Bachelors, Even* included *Bottle Rack* and *Bicycle Wheel* among his "readymades." This artist signed his most famous sculpture "R. MUTT." For 10 points, name this Dada chess player who created the urinal *Fountain*.

ANSWER: Marcel Duchamp <Edited>

18. The eventual victor of a civil war in this state was captured at the first battle, but escaped while the enemy got drunk celebrating, allowing a woman to smuggle him a drilling tool. This non-Middle Eastern state controlled restive peoples by forcing their chiefs to live at the capital and deporting them to new regions, placing loyal subjects in their place. After enemies with loud trumpets ambushed and captured the litter of a ruler of this state in a market square, his troops routed despite outnumbering the enemy over forty to one. (\*) Smallpox killed a ruler of this state and his son Ninan Cuyochi, prompting a brutal civil war in which the generals Chalkuchimac and Quizquiz massacred thousands of their opponents. A later ruler of this empire was ransomed for a room of gold after he was captured at Cajamarca. For 10 points, name this empire over which Huascar and Atahualpa fought a civil war.

ANSWER: Incan Empire [or Tawantinsuyu] <Edited>

19. The Lorenz number equals the ratio of two material-dependent constants times the inverse of this quantity according to the Wiedemann-Franz Law. A correction of alpha times this quantity squared over beta plus this quantity is applied to the band gap energy in Varshni's equation. The ratio of perpendicular electric and magnetic fields divided by the (\*) gradient in this quantity gives the magnitude of an effect named for Ettingshausen and Nernst. Population inversion generates an unusually negative value for this quantity. A junction with different types of conductor with different values of this quantity generates EMF in the Seebeck effect. Wien's law inversely relates the peak wavelength of blackbody radiation to this quantity, explaining why the brightest main sequence stars are blue. For 10 points, name this quantity measured in kelvins.

ANSWER: Temperature [prompt on T]

20. A character in this play angrily demands a clock to strike ten before saying that "Betwixt thy begging and my meditation. / I am not in the giving vein today." It's not part of the *Henriad*, but discussion of the claim that "succeeding ages have re-edified" a place begun by Julius Caesar precedes an aside in this play which asserts that "So wise, so young, they say, do never live long." The line "Off with his head! So much for" a character in this play was added in a rewriting by (\*) Colley Cibber. Ghosts of the title character of this play's victims command him to "despair and die." The speaker of a soliloquy in this play resolves that "since I cannot prove a lover...I am determined to prove a villain." The title character of this play's last lines before being slain by Richmond is "A horse! A horse! My kingdom for a horse!" For 10 points, name this Shakespeare play that begins with Gloucester declaiming "Now is the winter of our discontent made glorious summer by this son of York."

ANSWER: Richard III

TIEBREAKER/EXTRA TOSSUPS

1. During this event, the line “here come the bloodhounds – you do your duty and I’ll do mine” was supposedly spoken by Samuel Fielden, who used a wagon as a platform to deliver a speech about inequities in the justice system. A “concise history” of the trials after this event was written by Dyer Lum. An account of the “martyrs” of this event was published by Lucy Parsons, the wife of one of its victims. A police officer killed at this event, Mathias Degan, is commemorated by a statue. (\*) Emma Goldman chose to be buried near people executed after this event, who did not include Louis Lingg, who blew himself up. It prompted a government crackdown on German-speaking trade unions and members of the syndicalist movement, such as August Spies. Three survivors of this event were pardoned by governor John Altgeld. For 10 points, violence marred what 1886 pro-labor demonstration at a Chicago square?

ANSWER: Haymarket Square riot [accept synonyms for “riot,” such as “affair,” “incident,” or “massacre”]

2. In Filipino folklore, the ekek are creatures who resemble humans but possess these body parts and feed on human flesh. The Iranian symbol of the Farvahar prominently features these body parts alongside a man. While abducting Sita, Ravana used his sword to sever these body parts from the pursuing Jatayu. A creature with these body parts holds the nectar of immortality hostage until Indra allows him to feed on (\*) Nagas. In Mesopotamia, Anzu, Siris, and Lammasu are depicted with these body parts. After arriving in Cocalus, a creator of these objects offered them to Apollo after dedicating a temple to him. A creature with these body parts was born along with his brother Chrysaor after Perseus decapitated Medusa. For 10 points, name these objects, artificial versions of which melted when Icarus flew too close to the sun.

ANSWER: wings

## BONUSES

1. A 1919 Army convoy primarily travelling along this route broke nearly 100 bridges and reported minimal paving between Illinois and Nevada. For 10 points each:

[10] Name this highway, which ran from New York City to San Francisco. Entrepreneurs started the trend of oversized roadside attractions along this highway in order to attract the new motorists travelling on it.

ANSWER: **Lincoln** Highway

[10] This general names a map of roads crucial to national defense that was created after the aforementioned disastrous convoy. He led the American Expeditionary Force, comprised of troops known as "doughboys."

ANSWER: John **Pershing**

[10] Experiences on the 1919 Army convoy led this other general to champion a network of highways. As U.S. President, he actually got those highways built.

ANSWER: Dwight (David) **Eisenhower** <Edited>

2. Answer these questions not written by Will Alston (surprise!) about a Southeast Asian epic, for 10 points each:

[10] This Vietnamese epic by Nguyễn Du written in lục bát, or "six-eight," meter follows a young woman who marries Scholar Mã to save her family, only to be forced into prostitution when it turns out that Scholar Mã is a pimp.

ANSWER: *The **Tale of Kieu*** [or ***Truyện Kiều***; accept ***Đoạn Trường Tân Thanh*** or ***A New Cry From a Broken Heart***]

[10] *The Tale of Kieu* was written in chữ Nôm, a vernacular script literally meaning "Southern writing" which drew heavy influence from this Chinese dynasty, whose own literary giants include Li Bai and Du Fu.

ANSWER: **Tang** Dynasty

[10] Nguyễn Du himself wrote during this dynasty of Vietnamese history, whose legendary founder had a magical sword inscribed with "The Will of Heaven" gifted to him after multiple trials by a Dragon King.

ANSWER: Later **Lê** Dynasty [accept **Lê Lợi**]

3. The introduction "Rhizome" from *A Thousand Plateaus* begins with the score of the fourth of a series of five pieces written for this performer by Sylvano Bussotti. For 10 points each:

[10] Name this pianist who pretty much just opened and closed his keyboard lid while premiering John Cage's 4'33". Stockhausen dedicated his *Klavierstück VI* to him.

ANSWER: David **Tudor**

[10] Tudor's premiere of Cage's 4'33" is taken as the starting point of this man's book *Experimental Music*. He also wrote the pieces Holly Hunter plays in a Jane Campion movie.

ANSWER: Michael Laurence **Nyman**

[10] As a critic, Nyman was the first person to apply this term to music, using it to describe Cornelius Cardew's *The Great Digest* and Henning Christiansen's *Springen*. Nyman himself is associated with this movement, whose pioneers include Terry Riley.

ANSWER: **minimalism** [accept word forms]

4. A method of static analysis that uses a conjugate one of these objects of identical length relates the slope of the real one to the shear on the conjugate one. For 10 points each

[10] Name these structural elements, exemplified by the cantilever, which is one of these supported at only one end.

ANSWER: **beams**

[10] Cantilevers can be used in the construction of these structures which also come in truss and suspension varieties.

ANSWER: **bridges**

[10] Shear stress in beams is proportional to the change in this quantity, the resistance of a beam to flexural changes. It is the primary measure of a beam's strength.

ANSWER: **bending moment** [prompt on partial answer]

5. Al-Farabi is perhaps most famous for his extensive treatise on this subject, in which he claimed that its first principles arose from mathematics. In later philosophical work, this subject undergirds Dionysian revelry, and Schopenhauer believed its absolute form brought a human the closest possible to experiencing the Will.

ANSWER: **music**

[10] Al-Farabi heavily influenced this non-Islamic thinker's *Treatise on Logic*. Along with being the most heavily cited philosopher in this author's works, al-Farabi inspired this philosopher's notion of prophet as lawgiver.

ANSWER: Moses **Maimonides** [or Moses **ben-Maimon**; or **Rambam**]

[10] A major recent entry into the scholarship on Maimonides influence on this later Jewish thinker is by Joshua Parens and concerns their contrasting views on human nature. This Dutch philosopher wrote *Ethics*.

ANSWER: Baruch **Spinoza**

6. Solutions of alkali metals in ammonia create these species, which results in a bright blue color when sodium is used, For 10 points, each,

[10] Name these species, the equivalent of salts where an electron acts as the anion.

ANSWER: **Electride** [or **solvated electron** ]

[10] The blue sodium electride described above is used to conduct this reaction which reduces benzene derivatives to unconjugated cyclohexadiene derivatives.

ANSWER: **Birch** Reduction

[10]The Birch Reduction also reduces these functional groups which can be moved from internal to terminal positions in the zipper reaction. They are comprised of a carbon-carbon triple bond.

ANSWER: **Alkynes** [do NOT accept **Alkane** or **Alkene**. if pronounced unclearly, ask them to spell it. The key letter is the 'y']

7. This company has been accused of using predatory pricing in an attempt to drive out competitors. For 10 points each:

[10] Name this ridesharing service, the most popular of its kind.

ANSWER: **Uber**

[10] Uber recently said they would pull out of Austin after the city's residents voted against Proposition 1, which would have prevented the city from requiring Uber drivers to undergo this process, which Chicago also proposed to make drivers undergo. The results of a person undergoing this process are classified using the Henry Classification System.

ANSWER: **fingerprinting** [prompt on criminal **background check** or equivalent answers]

[10] One advantage of ridesharing services over public transportation is that they are not susceptible to this problem, which is the question of how to bring people from bus stops or other hubs to their final destination.

ANSWER: **last mile** problem <Edited>

8. After years of fighting the Spanish in Venezuela, this man led a force to capture the smuggler paradise of Amelia Island and turn it over to Bolivar, but his own men deserted him. For 10 points each:

[10] Name this Scotsman, who convinced hundreds of unwitting Britons to colonize the fictional Central American country of Poyais, which he claimed to be appointed *cacique* of by local Miskito natives. After most of the colonists died, he fled to France and was somehow acquitted of fraud.

ANSWER: Gregor **MacGregor**

[10] This earlier Scottish attempt to settle the New World and found a colony called Caledonia failed massively due to disease, lack of demand for trade goods, and a general lack of competence and planning.

ANSWER: **Darien** Scheme

[10] This non-Scottish person and favorite of Elizabeth I set up the Roanoke colony in North Carolina, whose settlers all disappeared, victims of an unknown fate.

ANSWER: Sir Walter **Raleigh** <Edited>

9. This conflict provides the backdrop for a collection of stories by James Michener set on the New Hebrides Islands in Coral Sea, which was adapted into a Rodgers and Hammerstein musical. For 10 points each:

[10] Identify this conflict, the setting of *Tales of the South Pacific*. In a novel set during this conflict, an expert bugler is killed during the attack on Pearl Harbor.

ANSWER: **World War II**

[10] Private Prew deserts "the Boxing Company" after getting thrown into the Stockade and growing disillusioned with the Army in this James Jones novel which was adapted into a movie starring Burt Lancaster, Montgomery Clift, and Frank Sinatra.

ANSWER: ***From Here to Eternity***

[10] This 1933 James Hilton novel was the origin of the story of the paradise Shangri-La, whose inhabitants live very long lives, enjoy inner peace, and preserve the great works of humanity in the face of looming world wars.

ANSWER: ***Lost Horizon***

10. This economist names a statement that extraction of non-renewable resources should occur at a rate that results in their prices increasing at the prevailing interest rate. For 10 points each:

[10] Name this economist, who also created a competition model that considered the locations of the competitors, which suggests that it is rational for both firms to locate themselves in the middle.

ANSWER: Harold **Hotelling**

[10] Similar to the conclusions from Hotelling's law and location model, this statement from politics argues that political parties in majority-rule systems will tend to shift to have less-differentiated, centrist positions in order to capture additional voters.

ANSWER: **median voter** theorem

[10] Products also tend to be relatively non-differentiated in this kind of market, which is dominated by a few major producers. It's described by the Stackelberg competition model.

ANSWER: **oligopoly** <Edited>

11. In 1909, this man led the University of Chicago to the Big 10 basketball championship. However, he is probably more famous for some science stuff. For 10 points each,

[10] Name this astronomer whose championship basketball was carried up to his namesake space telescope. He also discovered the expansion of the Universe which is parametrized by his namesake constant.

ANSWER: Edwin **Hubble**

[10] The inverse of Hubble's constant is typically given as an estimate for this quantity. That estimate was significantly lower than the related value for globular clusters for early values of Hubble's constant.

ANSWER: the current **age of the Universe** [Accept clear knowledge equivalents]

[10] Give the Hubble Constant in terms of the scale factor,  $a$ , and its derivatives. This quantity is the left hand side of the first Friedmann equation.

ANSWER:  **$\dot{a}$  over  $a$**  [or **time derivative of  $a$  over  $a$**  or  **$da/dt$  over  $a$** ; do not prompt on partial answer]

12. In the late 1940s this colony was the site of the "groundnut scheme," in which Britain's Labour government wasted at least 36 million pounds. For 10 points each:

[10] Name this African territory, which became a Class B mandate under the League of Nations in 1922.

ANSWER: **Tanganyika** [prompt on **Tanzania**; do not accept or prompt on "Zanzibar"]

[10] After World War I, Tanganyika was transferred to Britain from this empire that used to control it. This empire also owned a colony called its "South West Africa" that became Namibia.

ANSWER: **German** Empire [or **Germany**, **Deutschland**, etc.]

[10] In this 1905 uprising in what became Tanganyika, local people used millet stalks as a symbol of opposition to the Germans. Its leader was a spiritualist who claimed to be able to turn bullets into water.

ANSWER: **Maji-maji** uprising [accept equivalents for uprising such as **Maji-maji** rebellion, etc.]

<Edited>

13. This film was originally going to be about a trial psychiatrist known as "Doctor Death" for his penchant for testifying at capital murder trials. For 10 points each:

[10] Name this documentary about the trial of Randall Dale Adams, who was imprisoned for a murder he did not commit. This film is notable for its use of reenactments of the testimony of the people involved in the trial.

ANSWER: *The **Thin Blue Line***

[10] This filmmaker rose to prominence due to *The Thin Blue Line*. Other Films by him include *The Fog of War* and *Mr Death: The Rise and Fall of Fred A. Leuchter, Jr.*

ANSWER: Errol **Morris**

[10] This other political documentarian is responsible for *Bowling for Columbia*. He also won the Palme d'Or for *Fahrenheit 9/11*.

ANSWER: Michael **Moore** <Edited>

14. This belief is the official doctrine of the Seventh-Day Adventist church. For 10 points each:

[10] Name this belief that souls that do not go to Heaven are not consigned to eternal torture but are instead simply destroyed.

ANSWER: **annihilationism**

[10] A common Christian belief holds that the righteous who died before the coming of Christ were saved by this event, which is attested to primarily in the Apocrypha.

ANSWER: the **Harrowing of Hell** [or **Descent into Hell**; or *Descensus Christi ad Inferos*; accept *but do not reveal Christ in Limbo*]

[10] A thorny problem in Christian theology has been the issue of infants who die before receiving this sacrament establishing that they are Christians. This sacrament often takes the form of immersion of its recipient in water.

ANSWER: **baptism** <Edited>

15. Dante Gabriel Rossetti translated one of this man's poems into English as "The Ballad of Dead Ladies." For 10 points each:

[10] Name this poet who wrote about the underworld of 15th-century Paris in his *Le grand testament*.

ANSWER: Francois **Villon**

[10] Rossetti translated the best-known line of Villon's poetry, which asks "where are *these weather phenomena* " of yesteryear"?

ANSWER: (where are) the **snows** of yesteryear [or Mais ou sont les **neiges** d'anton]

[10] "The Ballad of Dead Ladies" asks for several women, including this "learned nun," for whom her lover "Lost manhood and put priesthood on."

ANSWER: **Heloise** [or **Heloisa**]

16. This author set a group of novels including *Weymouth Sands* and *A Glastonbury Romance* in Wessex in homage to Thomas Hardy. For 10 points each:

[10] Identify this author best known for *Wolf Solent*, a novel about a history teacher who returns to Dorset after being fired from his job in London for unleashing a world-weary rant upon his classroom.

ANSWER: John Cowper **Powys**

[10] Though not from this country, Powys died here. Powys also set two major historical novels in this country, *Porius* and *Owen Glendower*.

ANSWER: **Wales**

[10] Powys's literary fame also rests heavily on his 1934 work in this genre, which notably avoids discussing women. Another example of this genre is the short story collection *Portrait of the Artist as a Young Dog*.

ANSWER: **autobiography** [or **autobiographies**]

17. This woman's father, Francis II, was required to get the permission of the King of France in order to marry her off by terms of the Treaty of Sablé ending the "Mad War." For 10 points each:

[10] Name this woman, who ended her engagement to Maximilian I when the king became concerned about his realm being encircled by a powerful political couple.

ANSWER: **Anne** of **Brittany** [prompt on **Anne**]

[10] This was the king in question, who ended up marrying Anne before launching an invasion of Italy that was halted at Fornovo. Anne also married this ruler's successor, Louis XII, who preferred her to his previous wife Joan of France, whom Louis insisted used witchcraft to impede his sexual performance.

ANSWER: **Charles VIII** [or **Charles the Affable**; or **Charles I'Affable**; prompt on **Charles**]

[10] Charles VIII fell into a coma and died shortly after watching a sporting event in one of these places. 576 people swore an oath at one of these places during the French Revolution.

ANSWER: **tennis court** [or **jeu de paume** court; prompt on partial answer] <Edited>

18. Myoblasts fuse to form myotubes, which mature into cells that comprise this tissue. For 10 points each:

[10] Name this type of muscle tissue that, in humans, is responsible for voluntary motion.

ANSWER: **skeletal** muscle

[10] This British doctor names a genetic disease in which a faulty gene for myophosphorylase prevents the proper breakdown of glycogen in skeletal muscle.

ANSWER: Brian **McArdle** (accept **McArdle** disease or **McArdle's** disease)

[10] Individuals with McArdle's disease are susceptible to rhabdomyolysis, which can cause severe damage to and/or acute failure of this organ by increasing blood levels of myoglobin

ANSWER: **kidneys**

19. According to this theorist, class fractions, or occupational categories, are the most important determinants of inherited aesthetic preferences. For 10 points each:

[10] Name this author of *Distinction: A Social Critique of the Judgment of Taste*, which argues that the imposition of the mores of the wealthy elite upon the unprivileged masses constitutes "symbolic violence."

ANSWER: Pierre **Bourdieu**

[10] Bourdieu gave this originally Aristotelian term to the system of schemas that determine the way an agent interacts with the world. Different social structures give rise to unique forms of understanding and perception that inform this concept.

ANSWER: **habitus**

[10] Beyond economic and social capital, Bourdieu emphasized a form of capital that derives from this concept. Franz Boas advocated that researchers take a "relativist" view towards it.

ANSWER: **culture** [accept **cultural relativism**] <Edited>

20. Answer some questions about the intersection of art and mental illness, for 10 points each:

[10] Though the exact motivation and provenance of the series is not certain, this artist was commissioned by Étienne-Jean Georget to produce works such as his *Portrait of a Kleptomaniac*.

ANSWER: Théodore **Géricault**

[10] This longtime resident of the Seiwa Hospital for the Mentally Ill is best-known for her many polka dot works and her *Mirror/Infinity Rooms*, which consist of mirror lined rooms and many hanging coloured balls.

ANSWER: Yayoi **Kusama**

[10] This artist's mental illness themed works include *Yard with Lunatics* and *The Madhouse*. He fell ill in Seville in 1792, attested by letters describing his depression to his friend Martin Zapatero. He died in Bordeaux after moving from the Quinta del Sordo, where he painted his *Black Paintings*

ANSWER: Francisco **Goya** <Edited>

#### EXTRA BONUSES

1. The "Stork's Head" is one of the highest peaks in this mountain range. For 10 points each:

[10] Name this range that extends northeast from the Belfort Gap. The so-called "Pagan Wall" is an ancient fortification near its crest.

ANSWER: [High] **Vosges**

[10] The Vosges are the traditional western border of this historical region of France. In 19th-century territorial disputes, it was paired with neighboring Lorraine.

ANSWER: **Alsace** [accept **Alsace-Lorraine**]

[10] The cultural center of Alsace is this city between the Rivers Rhine and Ill. It was the home of Gottfried, the author of the Middle High German *Tristan*.

ANSWER: **Strasbourg** [or **Strassburg**; accept **Gottfried von Strassburg**]

