

2015 George Oppen: Questions courtesy of Anne Hathaway's cow-milking fingers  
Written by Aauroni Gupta, Stephen Eltinge, and Mike Cheyne  
ROUND 14

## TOSSUPS

1. The Breusch-Pagan test determines whether this quantity is constant across observations. Peter Whittle derived an extension of one bound on this quantity that applies to wide-sense stationary time series. That result bounds this quantity below by the negative reciprocal of the expected second derivative of the log-likelihood. This quantity is greater than or equal to the reciprocal of the Fisher information according to the (\*) Cramer-Rao bound. This quantity, which is given by the second cumulant, is the same across repeated samples if a variable is homoscedastic. This quantity equals the mean of the square minus the square of the mean. Its "sample" version has an  $n - 1$  in the denominator where its "population" version has an  $n$ . For 10 points, identify this quantity that is the square of the standard deviation and measures the amount of spread in a data sample.

ANSWER: variance

2. Adventists often recite a passage in this book that defends Sabbath observance as a "shadow of the things that were to come." This book mentions another Jesus, who is referred to as "Justus." The theological doctrine of mortification stems from this book's command to "Put to death, therefore, whatever belongs to your earthly nature." The only mention of the lost Epistle to the Laodiceans occurs in this book. This book ends with a request to "remember my chains," and unlike Ephesians, it commands husbands to "love your wives, and do not be harsh with them," to accompany its request for wives to "submit to your husbands." This book says that the "son is the (\*) image of the invisible God, for in him all things were created." This epistle is addressed to a congregation founded by Epaphras which was increasingly becoming more Gnostic and friendly toward pagan practice. For 10 points, name this Pauline epistle written to a city in Phrygia in Asia Minor, which precedes 1 Thessalonians in the New Testament.

ANSWER: Epistle to the Colossians

3. The protagonist of this play comments "That certainly was a *maudlin* display" after being handed a popsicle and being called a sweetheart. The opening monologue of this play deconstructs the greeting "Hi, how are you feeling today?" The protagonist of this play realizes her calling in life when, as a five-year old, she read her father a Beatrix Potter fable and fell in love with the word "soporific," mirroring a later scene in which a man reads *The Runaway Bunny* to her. Near the end of this play, which was adapted into a film by Mike Nichols with (\*) Emma Thompson in the lead role, Jason Posner tries to resuscitate the main character despite the "do not resuscitate" note on her chart. Throughout this play, the main character recites "Death be not proud" and other *Holy Sonnets* by Donne as a means of coping with treatment for stage IV metastatic ovarian cancer. For 10 points, name this one-act play about the terminally-ill English professor Vivian Bearing, which won the 1999 Pulitzer for its author Margaret Edson.

ANSWER: Wit

4. The Dominican friar William of Tripoli personally baptized a thousand non-Christians in this city, which was reinforced by fortifications with names such as the Tower of the Legate, the Tower of the Patriarch, and the Accursed Tower. The War of Saint Sabas grew out of a land dispute between Venice and Genoa in this city. After a battle fought in this city, 3000 soldiers were massacred on the nearby Ayyadieh hill. Qalawun planned a siege of this city, but died before it could take place, entrusting his son Al-Ashraf Khalil with the plans. A malaria epidemic that spread throughout a military camp near this city killed Queen Sibylla and her daughters. The Knights Hospitallers relocated to Cyprus after the fall of this city in (\*) 1291. A Pisan navy backed Guy of Lusignan's siege of this city, whose besiegers were themselves besieged by Saladin. After successfully besieging this city, Richard the Lionhearted pressed his advantage at the Battle of Arsuf. For 10 points, name this site of a devastating 1189-91 siege during the Third Crusade, the chief Crusader port city.

ANSWER: Acre [or Akko; or Akka]

5. A concerto by this composer begins with the soloist playing some chords in the tonic G major, which the orchestra strangely repeats in the key of B major. The solo cello enters a bar later than expected in a concerto by this composer ending with a lively "rondo alla polacca." This composer included a "cadenza, but without falling down" for a concerto whose second movement dialogue between the piano and unison strings is often-compared to "Orpheus taming the furies." Yet another concerto by this composer begins by alternating single E-flat, A-flat, and B-flat chords from the orchestra with cadenza-like passages for the piano. Five timpani beats begin this composer's violin concerto, whose (\*) disastrous premiere was allegedly marred by

Franz Clement improvising a composition on an upside-down violin. Brahms's D major violin concerto is indebted to the violin concerto in the same key by this composer, whose fifth piano concerto has a regal nickname. For 10 points, name this composer of the "Emperor" piano concerto.

ANSWER: Ludvig van Beethoven

**6. Year or winning candidate is acceptable. One side in this election hired a lawyer self-described as a "new gun with the shiny pistol," named Fritz Knaak. The incumbent in this election faced allegations that he had illegally received money from Deep Marine Technology. The wife of this election's winner appeared in an ad discussing how her husband helped her through her alcohol addiction. This election is the subject of the book *This is Not Florida*, written by Jay Weiner. During this election, the notorious "fifth pile" consisted of wrongly-rejected (\*) absentee ballots. A five-person panel including Mark Ritchie and Chief Justice Eric Magnuson oversaw the recount in this election, in which the losing candidate appealed to the State Supreme Court, but was rejected, despite former governor Arne Carlson advising him to concede. Six months after his term should have begun, the winning Democratic Farmer-Labor candidate in this election took his oath of office. For 10 points, name this protracted and close election in which Norm Coleman was defeated by a comedian.**

ANSWER: 2008 Minnesota Senate election [or Al Franken; prompt on 2008 or 2008 Senate, although why would anyone say that]

**7. DePuy et al. developed a fluorodesilylation method to synthesize these compounds in the gas-phase. In his seminal book about these compounds, Donald Cram came up with the MSAD scale, named for the last initials of four data contributors. In 1984, Olmstead et al. reacted triphenylmethane with n-butyllithium and 12-crown-4 to produce a stable species of this kind. Thiamine pyrophosphate transforms into a compound of this type before undertaking a nucleophilic attack on a substrate. [2,3]-sigmatropic rearrangements in which one of these groups is adjacent to an (\*) alkoxide, are known as Wittig rearrangements. The first step in an E1CB reaction mechanism is the formation of one of these species. The enol form of an enolate contains this reactive intermediate. This species, which has a trigonal pyramidal geometry, is the only reactive intermediate to follow the octet rule. For 10 points, name these chemical species in which an unshared pair of electrons make carbons negatively charged.**

ANSWER: carbanion

**8. In 1984, Ronald Reagan appointed a man with this surname as the first official US Ambassador to the Holy See. A politician with this surname addressed fellow Pennsylvanians in a monumental speech in the courtyard behind Independence Hall, urging ratification of the Constitution. A former cobbler with this adopted surname controversially exchanged love letters with Rose O'Neal Greenhow, a Confederate spy whose information may have helped them win the First Battle at Bull Run, and succeeded Schuyler Colfax as (\*) Vice President to Ulysses S. Grant. A man with this surname re-established the practice of delivering the State of the Union Address in person, and discouraged black students from applying during his presidency of Princeton University. The Clayton Antitrust Act was passed during the presidency of that man with this surname, who "kept us out of war." For 10 points, give this surname of the president who issued the Fourteen Points near the end of World War I.**

ANSWER: Wilson [accept any of the following: William Wilson, James Wilson, Henry Wilson, and Woodrow Wilson]

**9. Peter Thorslev wrote a landmark 1962 study examining the "types and prototypes" of this kind of character. A character of this type wants to throw "soul, heart, mind, passions, feeling strong or weak... into one word, and that one word were lightning." A character of this type directs his dying words in a foreign language that can only be understood by his page, the cross-dressing Kaled, who herself is a possible female example of this type of character, named Gulnare. A character of this type accepts a cup of wine from Chamois Hunter, but imagines that it has the blood of his deceased lover (\*) Astarte on its brim. The title character from *Lara*, Conrad from *The Corsair* and the title character from *Manfred* exemplify this archetype, whose first example was a character who witnesses the Battle of Waterloo during a grand tour of Europe taken to escape boredom. For 10 points, name this archetype exemplified by Childe Harold, a vivacious, moody, and brooding adventurer modeled after a namesake Romantic poet.**

ANSWER: Byronic hero [prompt on partial answer; prompt on Romantic hero; prompt on Childe; prompt on young noblemen; prompt on pirate; prompt on corsair before mentioned]

**10. Accounts differ as to whether this man was killed by a powerful magic spell or whether he simply choked on a fish bone. This man had a watermill built to relieve his second wife of the obligation of grinding nine measures of grain per day, imposed by his first wife. This man placates a crying woman by specifying that her sheep should be returned and allowed to graze from the woad-garden it ate from, in a show of wisdom**

that so impressed the king that he resigned the throne to this man. The night this man was conceived, his mother Achtan dreamed that her head was cut off and that a giant tree was growing from her neck. This man gets blinded by a three-chained "dread spear" that wounds one of his advisers and kills his son Cellach. (\*)

Mannanan Mac Lir gives this man a magic cup which breaks if three lies are said over it and gets restored if three truths are spoken. This man's daughter Grainne elopes with the dreamboat Diarmuid during her engagement to Finn MacCool. For 10 points, name this High King of Ireland whom the Fianna serve in the Fenian Cycle, the son of Art.

ANSWER: Cormac mac Art [or Cormac ua Cuinn; or Cormac Ulfada]

11. 823 columns of white steel make up the facade of one of these buildings in Luxembourg, designed by Christian de Portzamparc. The most expensive one ever built is an illuminated blue cube in Copenhagen, designed by Jean Nouvel. Hans Scharoun inaugurated the "vineyard style" of constructing these buildings when he replaced a bombed-out one in Berlin with a structure consisting of interlaced yellow pentagons. QR codes appear during wallcasts tailored to people on the outside looking into one of these buildings in South Beach, known as the (\*) New World Center. Nearby condominium residents and sidewalk pedestrians had to deal with 140 degree Fahrenheit temperatures before the most famous of these structures had some of its panels sanded in 2005 to reduce glare. That building of this type resembles a boat with drenched sails, and consists of over 12,000 pieces of corrugated stainless steel. For 10 points, name these performing arts venues, including the one in Los Angeles designed by Frank Gehry and named for Walt Disney.

ANSWER: concert halls [or philharmonies; or music halls; or symphony halls; or headquarters of orchestras; or classical music auditoriums; or places where they play classical music; prompt on auditoriums; prompt on theaters]

12. A monarch of this name earned the ire of Pope Innocent VI by living with his mistress while unhappily married to Adelaide of Hesse. Possibly out of love for his beautiful Jewish mistress Esther, a ruler with this name instituted the death penalty for the crime of kidnapping Jewish children for the purpose of baptizing them. Ten of the twelve researchers present at the 1973 exhumation and re-interring of a monarch of this name died, either of a curse or a fungal infection. The Thirteen Years' War broke out after a monarch with this name incorporated the entirety of Prussia into his domain. For quashing the "Pagan Reaction" to Christianization of his kingdom, the first king of this name earned the epithet "the (\*) Restorer." The best-known monarch of this name succeeded his father Wladyslaw the Elbow-High, convened the Congress of Krakow, and instituted a series of legal reforms that inspired his nickname the "Polish Justinian." For 10 points, give this regnal name whose third holder was the only Polish monarch known as the "Great."

ANSWER: Casimir

13. A protein named for its involvement in this process undergoes the highly unusual polysialic acid post-translational modification. A deficiency in CD18 results in a rare, fatal autosomal recessive disorder in which this process is deficient in leukocytes. Bacterial proteins which facilitate this process include the Dr family and FimH in *E. coli*. Flamingo is a member of a family of GPCRs that have the GAIN domain, facilitating this process. In pemphigus, autoantibodies form against a family of proteins that assist in this process. It's not transcription, but a protein that regulates this process accumulates in the nucleus and cytoplasm in the (\*) Wnt signaling pathway. Proteins involved in this process include beta-catenin, as well as the selectins and integrins. Structures which serve this purpose include desmosomes and tight junctions. For 10 points, name this cellular process aided by cadherins, which facilitates binding to the extracellular matrix or to other cells.

ANSWER: cell adhesion [or cell attachment; accept cell-to-cell interactions; or cell-to-matrix interactions; accept descriptive equivalents, like cells sticking together]

14. A mute one of these creatures with red eyes has a vision in which it sees another of them eating a unicorn. In a dream, one of these creatures attacks and kills Iggo, the leader of the Bloody Mummies. Another of these creatures kills several people at the Battle of Whispering Wood and the Battle of Oxcross. These creatures are first encountered shortly after the death of Gared. A captive one of these creatures is freed by Raynald Westerling shortly before being killed and having its head sewn onto a human corpse. One of these creatures named (\*) Nymeria, who is believed to be on the loose in the Riverlands, bites a boy's arm, for which another of them named Lady is executed. A gray one of these animals appears on the sigil of a house whose motto is "Winter is Coming." For 10 points, name these large canines from *A Song of Ice and Fire*, several of which are owned by the Stark family as pets.

ANSWER: direwolves [prompt on wolves]

15. When he is shown a picture of an extinct fish in a zoology book, the protagonist of this novel feels an organ long-lost to evolution stirring within him. The protagonist of this novel receives a cryptic note reading "The bird fights its way out of the egg. The egg is the world. Who would be born must first destroy a world."

**The title character of this novel posits that the Biblical Cain had already been marked when people fabricated the story of Abel's murder. Early in this novel, the protagonist lies about (\*) stealing a sackful of apples to raise his social standing, but it backfires. This novel ends with the title character giving the protagonist a kiss on the lips on behalf of his mother Frau Eva. The organist Pistorius helps this novel's protagonist understand the nature of his god Abraxas. The title character of this novel telepathically stops Franz Kromer from bullying the protagonist. For 10 points, name this Herman Hesse bildungsroman about Emil Sinclair.**

ANSWER: Demian [or Demian: The Story of Emil Sinclair's Youth; or Demian: Die Geschichte von Emil Sinclairs Jugend]

**16. A leader of this country acknowledged his paternity with a Vietnamese concubine of two daughters, one of whom gave birth to a baby that was murdered by the doctor husband of the other. In the 1990s, the police in this country created a special Squad for the Repression of Banditry. This country is the site of long-lasting economic tensions between the poor "northerners," made up of the Gbaya people, and the wealthy "southerners," consisting of the Yakoma. In this country, whose official political party is known as (\*) MESAN, a leader was deposed and replaced by his cousin on the feast day of St. Sylvester, or New Years' Eve. A leader of this country who forced schoolchildren to buy school uniforms from a factory he owned was overthrown by Operation Barracuda and replaced with David Dacko. Christian anti-balaka groups arose in this country after its president Francois Bozize was overthrown in 2013 by the mostly-Muslim Seleka coalition. For 10 points, name this former French colony in Africa ruled by the cannibal dictator Jean-Bedel Bokassa.**

ANSWER: Central African Republic [or CAR; or Kodorosese ti Beafrika; or Republique centrafricaine]

**17. A place of this type gets into financial trouble when a scheme to mine gold under a virgin gold forest in Costa Rica is exposed. In a novel with this setting, a man moves into his girlfriend's place after a passing airliner ejects the shit from its toilet into his apartment. A man televises his threat to kill a duck every day until he receives money in Richard Russo's novel *Straight Man*, which is set in one of these places. The novels *Nice Work*, *Small World*, and *Changing Places* form a "trilogy" of books by (\*) David Lodge set in this kind of place. The eponymous *Group* in Mary McCarthy's novel is formed at one of these places. The protagonist of a novel with this setting falls asleep while smoking a cigarette and burns his lover's bedsheets, dates Christine Callaghan behind the back of her boyfriend Bertrand Welsh, and shows up outrageously drunk to his own lecture on "Merrie England." For 10 points, name this setting of novels such as *Lucky Jim*, whose protagonist is a medieval history professor.**

ANSWER: campus novels [or college; or university; prompt on school]

**18. This artist's painting of a child making a sand castle is part of his design for a folding screen that alternates nudes and landscapes at the top with frolicking rabbits at the bottom. This artist painted a little girl using an umbrella to walk across a cobblestone street while carrying a laundry basket. This artist painted his naked wife Marthe de Meligny in a series of paintings set in their bathroom, including a painting in which only her legs are visible inside a bathtub. A silhouetted woman wearing a coat and an ornate flowered hat accompanies a street urchin with a deformed face on this artist's poster for "La (\*) revue blanche." This artist's collaboration with the art dealer Ambroise Vollard culminated in his illustrations for Paul Verlaine's poetry collection *Parallelement*. This artist, who worked with his close colleague Paul Serusier to design the backdrop to Jarry's play *Ubu Roi*, was, with Edouard Vuillard, the chief exponent of the "Intimist" style. For 10 points, name this Post-Impressionist painter known for his sunlit interiors, a member of the Nabis.**

ANSWER: Pierre Bonnard

**19. A major scholar in this academic discipline came up with a theory of constant modification of schematic conventions by trial and error, secured a publisher for Karl Popper's *The Open Society and His Enemies*, and spun his magnum opus out of a book for children after immigrating to London from Vienna. The foremost Neo-Kantian book in this discipline is Wilhelm Worringer's *Abstraction and Empathy*. A German archaeologist and murder victim made substantial contributions to this field by studying the (\*) Greeks, inspiring Lessing to write his essay *Laocoon*. Ernst Gombrich and Johann Winckelmann studied this discipline, whose practitioner Erwin Panofsky placed iconology at a deeper level of meaning than iconography. Clement Greenberg's major essay in this discipline is "Avant-Garde and Kitsch." The first major book in this discipline was a set of biographies interspersed with anecdotes such as Piero di Cosimo's extreme misanthropy and Cimabue's brushing-off of a realistic-looking fly. For 10 points, name this discipline pioneered by Giorgio Vasari, who chronicled many contemporary painters.**

ANSWER: art history [or art criticism]

**20. This physicist names a function that gives the dependence of paramagnetic magnetization as a function of the ratio of Zeeman energy to thermal energy. He also names an analogue of Raman scattering in which**

electrons scatter off of low-energy acoustic phonons. Constant-energy surfaces are always perpendicular to the boundary of another construct named for this man, which has a (\*) volume of  $2\pi^3$  over  $V_{\text{sub-c}}$ . That object named for him can be constructed as the locus of all points that are accessible from the origin without crossing any Bragg planes, according to the Wigner-Seitz method. Every possible wave vector can be transformed into an equivalent vector within that construct, which is body-centered cubic for a face-centered cubic crystal. For 10 points, name this French physicist, whose namesake "zone" is the primitive cell of a crystal in reciprocal space.  
ANSWER: Leon Nicolas Brillouin

TB. An author from this school praised a man whose soul "committed holy rapes upon our will," in a poem crowning him as ruler of "the universal monarchy of wit." A poet from this school advised a woman with golden hair to "Let it fly as unconfined / As its calm ravisher the wind." One of these authors wondered how "This goblin Honour, which the world adores, should make men atheists, and not women whores?" The speaker of a poem from this group is "ravished in that fair *Via Lactea*" after putting his lips between a pair of breasts. This group of poets included an author whose play (\*) *Aglaure* contains a "Song" beginning "Why so pale and wan, fond lover" and a poet who included many erotic lyrics about Julia in his massive collection *Hesperides*. That poet from this group warned that "For having lost but once your prime, you may forever tarry" in his poem urging "Gather ye rosebuds while ye may." For 10 points, name this group of poets, including the author of "To the Virgins, to Make Much of Time," Robert Herrick, who supported Charles I in the English Civil War.  
ANSWER: Cavalier poets [prompt on sons of Ben; prompt on Caroline poets]

## BONUSES

1. Irish Defense Minister James Tully and a Cuban ambassador were wounded in this event, during which a crowd of people threw chairs around the victim to shield him from a hailstorm of bullets. For 10 points each:

[10] Name this October 1981 event carried out by Khalid Islambouli on behalf of the Islamic Jihad at a victory parade celebrating the eighth anniversary of Operation Badr.

ANSWER: Anwar Sadat assassination [or killing of Anwar Sadat; or synonyms]

[10] This former Air Chief Marshal ascended to the presidency of Egypt after the Sadat assassination, and remained there until 2011, when he was overthrown during Arab Spring.

ANSWER: Hosni Mubarak [or Muhammad Hosni El Sayed Mubarak]

[10] This man issued a fatwa greenlighting the Sadat assassination, but he is better known for leading the terrorist group al-Gama'a al-Islamiyya, and for surrounding himself with followers who carried out the 1993 World Trade Center bombing.

ANSWER: Omar Abdel-Rahman [or The Blind Sheikh]

2. The *Iliad* provides the backstory of the twins Orsilochus and Crethon immediately after describing how this man slaughtered them. For 10 points each:

[10] Name this man who gets injured during Diomedes's *aristeia*, but is whisked off to safety by Apollo, who leaves a replica of this man's body to ignite his comrades' passions.

ANSWER: Aeneas

[10] This goddess suffers a cut on her wrist in Book 5 of the *Iliad* when she tries to save her son, Aeneas, from Diomedes.

ANSWER: Aphrodite [or Venus]

[10] The chief source for Aeneas's kill count of 28 during the Trojan War is this *Fabulae* of this 1st century BC Roman author, who Augustus appointed superintendent of the Palatine library.

ANSWER: Gaius Julius Hyginus

3. Soluble methane monooxygenase contains no fewer than thirteen of the pi type of this feature, which are often visualized on Wenxiang diagrams. For 10 points each:

[10] Name this basic protein secondary structure containing 3.6 residues per turn. Virtually every structural motif is made up of these elements and beta strands.

ANSWER: alpha helix [or alpha helices; prompt on helix]

[10] c-Fos and c-Jun are prominent examples of proteins with this motif, in which two to seven alpha helices with two hydrophobic and two charged residues in a heptad pattern bind tightly to each other.

ANSWER: **coiled coil** [prompt on **coil**]

[10] Mostly helical proteins have a lower value for this measure, which is equal to the average distance between non-adjacent residues whose side chains touch, divided by the average length of the protein. A high value for this measure indicates a longer time needed for protein folding.

ANSWER: **contact order** [or **CO**]

4. This essay says of some especially pretentious buildings, that "one blinked before them as one blinks before a man with his face shot away." For 10 points each:

[10] Name this essay about the industrial squalor of the Pittsburgh area, which proclaims that "out of the melting pot emerges a race which hates beauty as it hates truth."

ANSWER: "The **Libido for the Ugly**"

[10] This satirist, the "sage of Baltimore," penned "The Libido for the Ugly" and wrote a study of how English is spoken in the United States, titled *The American Language*.

ANSWER: H. L. **Mencken** [or Henry Louis **Mencken**]

[10] Mencken's essay "The Sahara of the Bozart," which ridiculed the South for being an intellectual wasteland, impelled the Agrarians, such as Donald Davidson, Allan Tate, and Robert Penn Warren, to publish this collaborative intellectual manifesto.

ANSWER: ***I'll Take My Stand***: *The South and the Intellectual Tradition*

5. This film begins with a rapid sequence of shots of things like a crawling spider and a nail being driven into a hand, and it then transitions into a morgue where a boy lying deathly still on a bed wakes up when the phone rings. For 10 points each:

[10] Name this film which blurs the identities of the nurse Alma and her patient, the mute actress Elizabet Vogler.

ANSWER: ***Persona***

[10] This Swedish director of *Persona* depicted a knight's chess game with the Death in his film *The Seventh Seal*.

ANSWER: Ingmar **Bergman** [or Ernst Ingmar **Bergman**]

[10] Near the end of the film, after the shot of Alma's and Elizabet's faces merging into one, Elizabet breaks her silence when the nurse Alma commands her to say this word.

ANSWER: **"nothing"** [or **"ingenting"**, no other answers acceptable]

6. At the end of a novel by this author, a Chinese doctor agrees to pay a house visit to the protagonist's sick son Victor, but an Indian doctor doesn't, reinforcing the title inferior social status of Adah Ofilu. For 10 points each:

[10] Name this female Nigerian author of *The Bride Price*, *The Second-Class Citizen*, and *The Joys of Motherhood*.

ANSWER: Buchi **Emecheta**

[10] In 1980, this publisher included a new edition of Buchi Emecheta's *The Joys of Motherhood* among its "African Writers Series," which has played a key role in building international exposure for African literature.

ANSWER: **Heinemann**

[10] The first novel to be picked up by Heinemann's African Writers' Series is this one, in which an oracle decrees that Ikemefuna must die, and so his guardian Okonkwo helps kill him.

ANSWER: ***Things Fall Apart***

7. The ultra-fascist lady Rotha Lintorn-Orman formed the Q Division to oppose this event, which forms the backdrop to Hugh MacDiarmid's poem "A Drunk Man Looks at the Thistle." For 10 points each:

[10] Name this 1926 event during which, in response to the recommendations for better working conditions listed in the Samuel Report, 1.7 million workers stopped working.

ANSWER: 1926 UK **General Strike** [prompt on **strike** and other answers]

[10] The strike took place nine months after this day, on which the demands of the Miners Federation of Great Britain to keep miners' wages stable were agreed to by the British government.

ANSWER: **Red Friday** [or, if you are so inclined, **July 31, 1925**]

[10] A contributing factor of the strike was the return to the gold standard enacted by this Chancellor of the Exchequer under Stanley Baldwin, who had taken most of the blame for the disastrous Gallipoli Campaign ten years prior.

ANSWER: Winston **Churchill** [or Sir Winston Leonard Spencer-**Churchill**]

8. Although long-term unemployment pushes this curve outward, frictional unemployment pushes it toward the origin. For 10 points each:

[10] Name this curve that shows a hyperbolic declining relationship between the job vacancy rate, on the vertical axis, and unemployment, on the horizontal. Though it was developed by Christopher Dow, it is mysteriously named for a British social scientist and policy reformer.

ANSWER: **Beveridge** curve [or **UV** curve]

[10] The position of a point on the Beveridge curve indicates the current state of the economy in one of these repeating patterns, which switch between recessionary and expansionary periods, interspersed with economic crises and periods of recovery.

ANSWER: **business cycles**

[10] The creation of new jobs and the appointment of unemployed people to them is often described using this economic theory, in which the number of new relationships between employers and employees is a production-like function of the number of unemployed job seekers and the number of vacant positions.

ANSWER: **matching** theory [accept word forms]

9. Since the manipulation of these variables must be atomic, they are often manipulated using test-and-set instructions. For 10 points each:

[10] Identify these variables, which are used to govern allocation of limited resources to concurrent processes. Processes request and release resources from them using the "wait" and "signal" commands, respectively.

ANSWER: **semaphores** [prompt on **locks**]

[10] A processes that needs access to multiple protected resources may encounter this situation, in which multiple processes are each waiting for the other to finish. It is illustrated by the dining philosophers problem.

ANSWER: **deadlock**

[10] This type of semaphore ensures that no two concurrent processes execute critical sections of their code at the same time. They are used to avoid race conditions in which a program's outcome depends on which part finishes first.

ANSWER: **mutex** semaphores [or **mutual exclusion** semaphores]

10. These beings include Kunda, the steed that carries sorcerers, and Pinih, "of stinginess and who hoards but does not enjoy its hoard." For 10 points each:

[10] Name these evil beings who can be put at bay with the incantations found in the *Vendidad*. The earlier *Gathas* describe these beings as false gods who had not yet turned evil.

ANSWER: **daevas** [or **daeuuas**; or **dews**; or **devis**; or **divs**; or **dive**s; accept any answer where the only consonants are "d" followed by a "v"]

[10] The "daeva of daevas" in Zoroastrianism is this devil who is diametrically opposed to his good counterpart Ahura Mazda.

ANSWER: **Ahriman** [or **Angra Mainyu**]

[10] The *Yasht* curiously defines the "ones who sacrifice to the daevas" as the ones who propitiate to this not-evil goddess during the nighttime, because that is when daevas run about. This goddess of fertility, healing, and wisdom is a representative of *Aban*, or the waters.

ANSWER: **Anahita** [or Aredvi Sura **Anahita**; or **Nahid**; or **Anaitis**]

11. This conductor declined the opportunity to succeed Herbert von Karajan as music director of the Berlin Philharmonic, and he was furious when Deutsche Grammophon released his incomplete recording of Wagner's *Tristan und Isolde*. For 10 points each:

[10] Name this notoriously aloof German conductor who grew up in Argentina, who in 2011 was declared by BBC Music Magazine the greatest conductor of all time, ahead of Bernstein and Abbado.

ANSWER: Carlos **Kleiber**

[10] Kleiber produced *the* authoritative recording of this symphony, whose opening notes "G-G-G-E flat" are frequently compared to "fate knocking at the door."

ANSWER: Ludwig van **Beethoven's 5th** Symphony [or *Symphony No. 5 in C minor* by **Beethoven**]

[10] Kleiber's American debut happened in 1978 at this American "Big Five" orchestra, currently directed by Riccardo Muti. It plays summer concerts at the Ravinia Festival, and has been led in the past by Fritz Reiner, Georg Solti, and Daniel Barenboim.

ANSWER: Chicago Symphony Orchestra [or CSO]

12. This character, who takes the bus and taxi everywhere instead of driving his easily-available car, arranges for the escape of death row inmate Joseph Heurtin and outwits the Czech medical student Radek in the novel *A Battle of Nerves*. For 10 points each:

[10] Name this police detective who gets shot while tailing the Mortimer-Levingstons in *The Strange Case of Peter the Lett*, the first of 103 novels and stories by Georges Simenon to feature him.

ANSWER: Inspector Jules Maigret [or Inspector Jules Maigret]

[10] This French playwright used Maigret as the model for geriatric inspector who devotes his whole life to pursuing an aged gangster in his play *The Arrest*. He is better known for fictionalizing the trial of Joan of Arc in *The Lark*, and adapting *Antigone* into an allegory of the French Resistance.

ANSWER: Jean Anouilh [or Jean Marie Lucien Pierre Anouilh]

[10] Before turning to murder, Kees Poppinga, the protagonist of Simenon's non-Maigret novel *The Man Who Watched Trains Go By*, partakes in this activity for fun. Dr. B bifurcates into two personalities while performing it with himself in a Stefan Zweig novella, and Alexander Luzhin suffers a mental breakdown while doing this activity against Turati in a Nabokov novel.

ANSWER: playing chess

13. Citizens of this city donated four million sesterces to help rebuild Rome after its great fire, and act of kindness which Nero reciprocated after a fire in this city broke out a few years later. For 10 points each:

[10] Name this site of the "Sanctuary of the Three Gauls," the administrative center of Gaul in the early Roman Empire, and the precursor to modern-day Lyon. If Cassius Dio is to be believed, Clodius Albinus commanded 150,000 men at a 197 CE battle that he lost at this site.

ANSWER: Lugdunum

[10] This man won the Battle of Lugdunum, squashing the last claimant from the Year of the Five Emperors, and established a namesake dynasty continued by his sons Geta and Caracalla.

ANSWER: Septimius Severus

[10] Septimius Severus made olive oil a component of this service, which was reformed by Aurelian and Julius Caesar, reduced in scope by Augustus, and introduced by Clodius Pulcher as an agenda item in his bid for the tribunate.

ANSWER: offering free grain to the poor [or the alimenta; or the annona; accept descriptive equivalents of the primary answer; prompt on free food]

14. This song begins with a call-and-response section in which the singer instructs a crowd to call her "Ms. Carter." For 10 points each:

[10] Identify this two-part song, the third single from a certain self-titled 2013 album. It includes the line "I sneezed on the beat and the beat got sicker."

ANSWER: "Yonce/Partition" [prompt on "Yonce"]

[10] "Partition" ends with the French version of a monologue from this 1998 film, in which a character played by Julianne Moore opines that "it's a male myth about feminists that we hate sex."

ANSWER: *The Big Lebowski*

[10] This other single from *Beyonce*, which won two Grammys in 2015, features Jay-Z rapping "I'm Ike, Turner, turn up." The lyrics mention "our beautiful bodies grinding up in the club," as well as the repeated word "surfboard."

ANSWER: "Drunk in Love"

15. The energy flux due to this phenomenon is given by the Poynting vector. For 10 points each:

[10] Identify this form of energy transmission carried by perpendicular electric and magnetic fields propagating at the speed of light.

ANSWER: electromagnetic radiation

[10] One can compute the power radiated by an accelerating charged particle using this formula, in which it is proportional to the squares of both the particle's charge and its acceleration.

ANSWER: Larmor formula

[10] In this physicist's relativistic generalization of the Larmor formula, power is proportional to the sixth power of the Lorentz gamma. He is the alphabetically-prior namesake of a set of retarded-time potentials for a moving point charge.



ANSWER: Alfred-Marie **Lienard**

16. Jean-Honore Fragonard's son Alexandre-Evariste was a prominent painter in this style, whose popularity was encouraged by Alexandre Lenoir's establishment of the first chronologically-organized museum in the world. For 10 points each:

[10] Name this style of historical painting spearheaded by Pierre Revoil and Fleury Richard, that was nostalgic for the Middle Ages and the Renaissance.

ANSWER: **Trobadour** style

[10] This painter showed Louis XIII begging the Virgin Mary to protect France in one of his few forays into the Troubadour style, but he is better-known for his paintings *Jupiter and Thetis*, *The Apotheosis of Homer*, and *The Grande Odalisque*.

ANSWER: Jean **Ingres** [or Jean-Auguste-Dominique **Ingres**]

[10] Another of Ingres's troubadour style paintings shows Leonardo da Vinci expiring in the hands of this king, who had invited Rosso Fiorentino to come to France to head up the first incarnation of the School of Fontainebleau.

ANSWER: **Francis I** [or **Francois I**; prompt on **Francis** or **Francois**]

17. This process does not accompany respiration in climacteric organisms, and it can be aided artificially by calcium carbide, though this leaves dangerous trace amounts of arsenic. For 10 points each:

[10] Name this process in which fruits become less green, sweeter, tastier, and in general more palatable.

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

[10] This compound is an intermediate in the conversion of methionine into ethylene, the main plant hormone responsible for fruit ripening. This compound's namesake synthase is massively upregulated to induce ripening.

ANSWER: **ACC** [or 1-**Aminocyclopropane-1-carboxylic acid**]

[10] The mechanisms of fruit ripening are often studied using this model organism, whose genetically modified "Flavr Savr" variety was the first such commercially-grown food to be licensed for human consumption.

ANSWER: **tomato** [or **S. lycopersicum**; or **Solanum lycopersicum**]

18. The speaker of this poem observes that "ten men... who in eyes and ears match me" love "what I hate, shun what I follow, slight what I receive." For 10 points each:

[10] Name this poem, which follows an AABCCB rhyming structure, and starts with its title religious polymath exclaiming "Grow old along with me! The best is yet to be."

ANSWER: **"Rabbi Ben Ezra"**

[10] This Victorian poet specialized in dramatic monologues such as "Rabbi Ben Ezra" and "My Last Duchess."

ANSWER: Robert **Browning**

[10] This title character of an earlier Browning monologue looks nightly through the "gorgeous roof" of "heaven above" and wonders, since he's one of the elect, if he could "blend / All hideous sins, as in a cup, To drink the mingled venoms up" without forfeiting his position in heaven.

ANSWER: Johannes **Agricola** [or **Johannes Agricola**; or **"Johannes Agricola in Meditation"**]

19. The political chances of a member of this faction, Charles O'Connor, were hurt by his serving as political counsel for Jefferson Davis on his treason trial. For 10 points each:

[10] Identify this faction of Democrats, such as Samuel J. Tilden, who promoted laissez-faire capitalism and got their punning nickname for both their alcohol-swilling ways and their perceived reactionary political stance.

ANSWER: **Bourbon** Democrats [or **Bourbons**]

[10] Bourbons such as Tilden put the nail in the coffin of Boss Tweed, the head of this notoriously corrupt New York City political machine that enjoyed the support of poor Irish immigrants.

ANSWER: **Tammany Hall**

[10] This Bourbon West Virginia governor, the first ex-Confederate to be so-elected in the United States, failed to quell the Great Railroad Strike of 1877 by sending state troopers.

ANSWER: Henry M. **Mathews** [or Henry Mason **Mathews**]

20. Georg Lukacs called this group the "Grand Hotel Abyss" because of the perceived disconnect between the high-minded theorizing of its members and any real revolutionary movements. For 10 points each:

[10] Name this neo-Marxist school, co-led in its first generation by Theodor Adorno and Max Horkheimer, which practiced critical theory and grew out of the Institute of Social Research in the namesake German city.

ANSWER: **Frankfurt** School

[10] This 1964 book by a Frankfurt School member argues that the social repression present in both the capitalist West and the Soviet Union gives birth to the title kind of intellectually-limited people, and urges those people to participate in the "Great Refusal" by thinking critically.

ANSWER: **One-Dimensional Man**

[10] In his book *Negative Dialectics*, Adorno uses this metaphorical adjective to characterize all Western metaphysics, particularly Kant's, because it envisions human knowledge as a prisoner in a box, afforded only slight glimpses at the truth.

ANSWER: **peep-hole** metaphysics [accept synonyms for **peep-hole**; accept **guckkastenmetaphysik**]

TB. A member of this group painted "Figure in a Room," an interior portrait of a woman that was forged so convincingly that the original and the fake now hang side-by-side at the New Britain museum, inviting viewers to figure out which one is real. For 10 points each:

[10] Name this collective of artists who seceded from the Society of American Artists, and included among their ranks Frank W. Benson and John Twatchman, the latter of whom was replaced by William Merritt Chase after he died.

ANSWER: The **Ten** American Artists

[10] The Ten were proponents of the American branch of this primarily French art movement. Mary Cassatt was part of this art movement, which received its name from a seascape by Claude Monet.

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

[10] The ringleader of the Ten, Childe Hassam, focused on painting these objects late in his career, particularly in his excellent canvas *The Avenue in the Rain*. A later artist used encaustic on canvas to paint several of these objects, including three concentric ones in 1958.

ANSWER: American **flags** [or U.S. **flags**]