

Maryland Spring 2014 - Get Your Pencil and Paper Ready for Round 12

Packet 3

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Tossups

1. **It's not Cleveland, but one company based in this city, Bedrock Real Estate, is owned by Dan Gilbert, who has led efforts to revitalize this city. Some homes outside of this city were listed for as low as (*) \$1 on the website Zillow. One former mayor of this city was recently sentenced to twenty-eight years in jail following a corruption scandal; that mayor was Kwame Kilpatrick. This city is home to an industry that was controversially bailed out in 2008. For 10 points, name this Michigan city, home to automakers like GM and Ford.**

ANSWER: **Detroit**, Michigan

2. **It's not kappa, but in thermodynamics, this letter denotes the ratio between the constant pressure heat capacity and the constant volume heat capacity. It is the last letter in the nickname of a paper that outlined the theory of big bang nucleosynthesis. In Feynman diagrams, (*) photons are denoted with this letter. One quantity symbolized by this letter is one over the square root of the quantity one minus velocity squared over speed of light squared. That is the Lorentz factor. For 10 points, name this Greek letter which names the portion of the electromagnetic spectrum with frequency higher than X-rays.**

ANSWER: **gamma**

3. **In an F major scherzino in this work that depicts a scene from the Petipa-choreographed ballet *Trilby*, a pair of flutes represents some unhatched birds. A section of this work depicting the staggered pace of a gnome follows a section marked *Allegro giusto, nel modo russo; senza allegrezza, ma poco sostenuto* that opens with a solo trumpet to introduce one theme in it. A section of this work uses staccato notes to detail a "quarrel" in the (*) Limoges market, while its final section includes another theme based on a Russian Orthodox baptismal chant and recalls a design for "The Great Gate of Kiev." For 10 points, name this suite based on the paintings of Viktor Hartmann, a work by Modest Mussorgsky.**

ANSWER: **Pictures at an Exhibition**

4. **Members of this profession utilize the Boelcke and Mannock rules. People who survived a large operation involving this profession are known as "The Few" due to a Winston Churchill speech praising members of this profession. That speech refers to members of this profession who opposed the London (*) Blitz. A route used by members of this profession during the Korean War was called MIG Alley. Opposing members of this profession engage each other in dog fights, and famous members of this profession include Billy Mitchell. For 10 points, name these users of vehicles like the F-16, exemplified by Manfred von Richthofen, who was also known as the Red Baron.**

ANSWER: fighter **pilot** (or ace **pilot**; accept **airman** or **airwoman**; prompt on a mention of the RAF, though that is not a profession)

5. **One poem by this author mentions "twenty centuries of stony sleep" after describing a "vast image out of Spiritus Mundi." One of his poems describes a place where "evening [is] full of linnet wings" and where the speaker wants to have "nine bean rows" and a (*) cabin "of clay and wattles made." This poet wrote of a "rough beast" that "slouches towards Bethlehem to be born" in a poem that states "Things fall apart; the centre cannot hold." For 10 points, name this poet of "The Lake Isle of Innisfree" and "The Second Coming," an Irish Nobel laureate.**

ANSWER: William Butler Yeats

6. **This anthropologist compared the societies of the Mundugumor, Arapesh, and Tchambuli people in one work. This anthropologist's most famous work has a chapter discussing the role of a custom where participants can show off their "education," the dance. This anthropologist was (*) criticized as being the victim of a "fateful hoaxing" by Derek Freeman. This anthropologist was mentored by Franz Boas, who wrote the introduction to her most famous work. For 10 points, name this anthropologist whose six weeks in Ta'u were the basis for *Coming of Age in Samoa*.**

ANSWER: Margaret Mead

7. **This interaction occurs between every four residues of a standard alpha helix, as well as the link between matching base pairs in DNA. On phase diagrams of water, a negative slope between the solid and liquid phases can be attributed to this phenomenon. This phenomenon, which is stronger than (*) van der Waals forces but weaker than intramolecular forces, causes water to expand upon freezing. For 10 points, name this weak type of bonding that occurs between atoms of oxygen, nitrogen, or fluorine and its namesake element.**

ANSWER: hydrogen bonding

8. **This place is referred to as a "pleasing land of drowsy" in a quote from James Thomson's "Castle of Indolence." One building in this place is designed like an "eelpot" to trap thieves, and that building is the subject of vandalism by the owner of the horse Daredevil. In this town, one character hears the story of old Brouwer while attending a dance hosted by (*) Baltus van Tassel. This town is apparently haunted by the ghost of a Hessian soldier, and Brom Bones disguises himself as that Headless Horseman to drive the schoolteacher Ichabod Crane from this place. For 10 points, name this New York village, the subject of a "legend" by Washington Irving.**

ANSWER: Sleepy Hollow (or "The Legend of Sleepy Hollow"; accept "Castle of Indolence" on the first clue)

9. **Operation Doorstep was an early attempt to evaluate the results of one of these events. One of these events is shown after the camera zooms in on an eye and the narrator states "These are the stakes: make a world in which all of God's children can live." One film about these events features an animated segment about Bert the (*) turtle, and the possibility of one of these events is the subject of an advertisement which shows a child counting in a meadow and was run to criticize the policies of Barry Goldwater. The Daisy Ad depicted this kind of event, for which children were prepared by woefully inadequate *Duck and Cover* film. For 10 points, name this kind of event, fear of which led to the construction of countless bomb shelters during the 1950s.**

ANSWER: nuclear war (accept anything indicating an atomic bomb being dropped (in the United States))

10. **The original draft for this movie had one villain's name as "Iamnotarobot," and this film was written by the creators of *Clone High*. Shaquille O'Neal plays himself in this film, and Billy Dee Williams reprises his most famous role in this film. One character in this movie is the Charlie Day-played Benny, an astronaut who is obsessed with spaceships. Another character in this film is the pirate Metalbeard, and much of the plot of this movie is centered around the mysterious (*) device known as the "Kragle." The end of this movie features live-action scenes with Finn and Will Ferrell, who also voices President Business. For 10 points, name this 2014 film that stars Will Arnett as Batman and Chris Pratt as Emmett, an animated film based on a popular children's building toy.**

ANSWER: *The Lego Movie*

11. **MIMOS II is a Mossbauer spectrometer used for mineralogy on the surface of this body. 5261 Eureka is a trojan of this planet which has the second highest eccentricity after Mercury. A moon of this planet is thought to be the source of the Kaidun meteorite due to its carbonaceous chondrite composition. This planet's oldest features, including the Tharsis bulge, formed during its (*) Noachian period. This planet was explored by the**

surface rovers *Spirit* and *Opportunity*, and *Mariner 4* was the first successful flyby of this planet. This planet is orbited by Phobos and Deimos, and it is home to the giant volcano Olympus Mons. For 10 points, name this red planet that is between Earth and Jupiter in distance from the sun.

ANSWER: Mars

12. This grandfather of Sarpedon defeated some palace guards by calling upon Poseidon to flood the plain of Xanthus. This figure defeated the Solymi tribe and the pirate Cheirmarrhus before marrying Philonoe. This figure was accused of raping Stheneboea, and was sent to King Iobates as a result. Polyeidus told this figure to sleep in the temple of (*) Athena, who provided him with a golden bridle. He accomplished his most famous task by mounting a piece of lead on his spear. For 10 points, name this Greek hero who tried to ascend Mount Olympus on the winged horse Pegasus, the slayer of the Chimera.

ANSWER: Bellerophontes

13. In one story by this author, a conversation with a man giving away cream tarts leads Prince Florizel to the title “Suicide Club.” In another of his stories, a Hawaiian named Keawe manages to sell a cursed bottle to a drunk boatswain. The protagonist of one novel by this author is sold to the crew of the *Covenant* by his uncle Ebenezer. This author of a novel featuring Alan Breck and David (*) Balfour also wrote about a scientist who murders Danvers Carew and kills himself after running out of a chemical needed for his transformations. For 10 points, name this author of *Kidnapped* and *Doctor Jekyll and Mr. Hyde* who included the pirate Long John Silver in *Treasure Island*.

ANSWER: Robert Louis Stevenson

14. This color is not white, but it names a group that won the Battle of Lake Poyang. A group named after this color captured Chang’an, was started by Mother Lui and is also called the Chimei. Another group named after this color was led by the future Hongwu Emperor and overthrew the Yuan to start the Ming Dynasty. This color names a revolt against the Xin Dynasty established by Wang (*) Mang because of the dye used by its members on their face to create a demonic look. For 10 points, name this color that goes before Eyebrows and Turban in major Chinese rebellions, that is also used to refer to communist China and is the main color of the Chinese flag.

ANSWER: red

15. This artist depicted his patron being pulled by six pairs of horses in a “Large Triumphal Carriage.” A bat flies in front of a rainbow in another of his works. This artist’s works often include his initials, with one letter inset inside the other. The name of this artist of *Four Apostles* is sometimes given to a type of polyhedron which he included in a work that also depicts a magic (*) square and a sad-looking winged man. Snakes curl around the crown of a skeletal man in an engraving of his in which an armored figure rides in profile through a tangled forest. For 10 points, name this artist of *Melencolia I* and *Knight, Death, and the Devil*.

ANSWER: Albrecht Dürer

16. One of the longest serving men to hold this post, a member of the PSOE, was defeated for reelection because of his involvement with the establishment of the Antiterrorist Liberation Groups who perpetrated the Monbar Hotel Attack. Antonio Canovas and Praxedes Mateo (*) Sagasta alternated in this role in the late nineteenth century due to the *turno pacifico* rule that governed this office. Alfonso XIII aided Miguel Primo de Rivera’s seizure of this office in 1923. For 10 points, name this office recently held by Luis Zapatero that, along with the title of caudillo, was also held from 1939 to 1973 by Francisco Franco.

ANSWER: Prime Minister of Spain

17. In one scene of this novella, the main character’s eyes water with pleasure when he eats some moldy

cheese. The last sentence of this novella describes a girl “[getting] up and [stretching] her young body” after a tram ride. The protagonist of this novella attempts to hide a picture of a woman wearing a fur coat and surprises three bearded gentlemen while listening to his (*) sister play the violin. Near the end of this novella, a cleaner discovers the body of the protagonist, a former travelling salesman. For 10 points, name this novella which opens with Gregor Samsa waking up as a “monstrous vermin,” a work of Franz Kafka.

ANSWER: *The Metamorphosis* (accept *The Transformation* or *Die Verwandlung*)

18. Protein A disrupts this process by jumbling the orientation of IgG. IgM cannot be used to aid this process, since the Fc receptor is not present on the cells that facilitate it; Cb3 and other (*) opsonins are thus necessary to accomplish this process. Immature dendritic cells can engage in a “lite” form of this process known as nibbling. It is carried out by monocytes and macrophages. For 10 points, identify this process in which immune cells engulf and “eat” foreign bodies.

ANSWER: phagocytosis (prompt on “opsonization”; prompt on general answers like “immune response”)

19. During one festival, these people would cast beans over their shoulders to propitiate the spirits of the dead. These people, who celebrated the *Lemuria*, also held a festival that involved masters switching places with their slaves. The *flamines* were priests of these people, who worshipped a certain (*) two-faced god of gates and doorways. A select group of women from this culture were sworn to celibacy for a period of thirty years while maintaining a fire sacred to the goddess of the hearth, Vesta. For 10 points, name these people, who worshipped gods like Janus and appointed six Vestal Virgins.

ANSWER: Roman people

20. This sculptor created a piece with two hollow wooden ovoids separated by an ornately twisted piece of wood in his *King of Kings*, which was intended to be placed at his *Temple of Meditation*. One of his sculptures consists of seventeen stacked rhomboidal pieces and appears alongside the (*) *Kiss Gate* at Târgu Jiu. A sculpture by this man was the subject of a taxation scandal when it was imported to the United States; that sculpture uses a single curve of bronze to depict the title avian creature. For 10 points, name this Romanian artist of the *Bird in Space* series.

ANSWER: Constantin Brâncuși

Bonuses

1. Answer some questions about currently airing NBC shows. For 10 points each:

[10] This man is the current host of the *Tonight Show*. This guy who smiles a lot was formerly on SNL and took over for Jay Leno.

ANSWER: Jimmy **Fallon**

[10] This comedy stars Amy Poehler as Leslie Knope, a bureaucrat in Pawnee, Indiana. It also stars Adam Scott and Aubrey Plaza.

ANSWER: **Parks and Recreation**

[10] This critically-acclaimed drama based on a 1991 film stars Hugh Dancy as Will Graham and Mads Mikkelsen as the title character.

ANSWER: **Hannibal**

2. Lagrange's theorem concerns the order of these structures and their subsets. For 10 points each:

[10] Name these algebraic objects which consist of a set and a binary operation. They must be closed under that operation, contain identity, and each member must have an inverse.

ANSWER: **groups**

[10] In ring theory, this is a sort of analogous structure to a normal subgroup. It is a group under the addition operation and when you multiply an element of it by any other element of the ring, you get another member of it.

ANSWER: **ideal**

[10] Abelian groups are ones whose members all have this property. This means that it doesn't matter what order you perform the operation on two elements.

ANSWER: **commutative** (accept word forms)

3. In this play, Frank Gardner realizes that he is no longer "Vivvums' little boy" after the protagonist moves in with Honoria Fraser. For 10 points each:

[10] Name this play in which Vivie becomes a typist and parts with her mother after discovering that the latter still operates a brothel.

[10] This Irish playwright penned *Mrs. Warren's Profession*, as well as *Major Barbara*.

ANSWER: George Bernard **Shaw**

ANSWER: **Mrs. Warren's Profession**

[10] In this play by Shaw, Henry Higgins decides to "make a duchess out of [a] draggletailed guttersnipe," the flower girl Eliza Doolittle.

4. This artist's *Death and the Maiden* features two alien-like shapes with crossed arms next to the title figures. For 10 points each:

[10] Name this artist best known for a painting that features several figures on a boardwalk and an orange sky allegedly inspired by the eruption of Krakatoa.

ANSWER: Edvard **Munch**

[10] The aforementioned painting is this oft-stolen work that shows a distorted figure making the title noise.

ANSWER: *The* **Scream**

[10] Munch's Frieze of Life series includes this painting, in which a red-headed woman appears to be kissing or biting a man.

ANSWER: **Vampire**

5. The army the United States sent to fight in this war was known as the American Expeditionary Force, and was led by John Pershing. For 10 points each:

[10] Name this war in which American doughboys fought alongside the British and French against the Central Powers.

ANSWER: **World War I** (or **WWI**; or The **Great War**; or **World War One**; or The **First World War**)

[10] The AEF was instrumental in winning the second battle at this location during the Spring Offensive. The first battle was a massive victory for the French in which taxis were used to carry troops to the front.

ANSWER: First or Second **Marne**

[10] The coolest named regiment to fight in the AEF was this location's Hellfighters, who were assigned to fight with the French because of Pershing's racism.

ANSWER: **Harlem**, New York (prompt on "New York City")

6. Answer the following about numismatics. For 10 points each:

[10] Numismatics is the study of these objects, examples of which include the penny, nickel, and dime.

ANSWER: **coins** (accept **currency** or **money**)

[10] The form for the twenty-dollar double eagle gold coin, in circulation from 1907 to 1933, was designed by this prolific Irish-American sculptor of the Robert Gould Shaw Memorial.

ANSWER: Augustus **Saint-Gaudens**

[10] That aforementioned coin prominently features this statue. Another depiction of this figure was designed by Frédéric Auguste Bartholdi.

ANSWER: Lady **Liberty**

7. This poet described passing "the School, where Children strove at Recess" in her poem "Because I could not stop for death." For 10 points each:

[10] Identify this reclusive poet who wrote thousands of poems from her home in Amherst.

ANSWER: Emily Elizabeth **Dickinson**

[10] The speaker of this Dickinson poem has "signed away what portion of me be assignable" and is preparing to pass away when she sees the title creature. It ends "And then the Windows failed – and then I could not see."

ANSWER: "**I heard a fly buzz when I died**" (accept Poem **591** or Poem **465**)

[10] Another of her poems describes feeling "zero at the bone" after seeing one of these animals. That poem refers to this animal as a "fellow in the grass."

ANSWER: a **snake** (accept obvious synonyms)

8. In hornworts and other organisms, these organelles contain starch-rich clusters called pyrenoids. For 10 points each:

[10] Identify these organelles that can mostly be traced to endosymbiotic consumption of cyanobacteria by eukaryotes.

ANSWER: **chloroplasts**

[10] Pyrenoids can be found in the chloroplasts of these marine organisms, which include kelp. Cyanobacteria are often called the "blue-green" type of this organism.

ANSWER: **algae** (anti-prompt on "seaweed")

[10] Kleptoplastid members of this phylum sometimes pilfer chloroplasts from algae for their own nefarious purposes, like producing luciferin. These alveolates can produce saxitoxin and cysts made of either calcium carbonate or silicate.

ANSWER: **dinoflagellates**

9. A character in this play loses a contest where he has to speak some words onto a scale. For 10 points each:

[10] Identify this play in which Dionysus hears the croaking of the title creatures as he travels to the underworld to rescue Euripides from the dead.

ANSWER: *The* **Frogs**

[10] This ancient playwright mercilessly satirized his contemporaries and the Peloponnesian War in plays such as *Lysistrata* and *The Clouds*.

ANSWER: **Aristophanes**

[10] Aristophanes wrote in a satirical and scatological style called Old Comedy, which is contrasted with the New Comedy of this author. He wrote a play in which the title grouchy old man is rescued from a well by Gorgias.

ANSWER: **Menander** (or **Menandros**)

10. This god created humans by sprinkling his blood onto bones that he retrieved from Mictlan. For 10 points each:

[10] Name this chief god of a certain people who was depicted as a feathered serpent. He burned himself to death after being tricked into sleeping with a celibate priestess.

ANSWER: **Quetzalcoatl**

[10] Quetzcoatl was the chief god of this Latin American group that conducted ritual sacrifices in their capital of Tenochtitlan.

ANSWER: **Aztecs**

[10] This Aztec rain god is known for demanding child sacrifices. His namesake paradise was the destination of those who died violent, water-related deaths.

ANSWER: **Tlaloc**

11. This architect designed the John Hancock Tower in Boston, the tallest building in New England. For 10 points each:

[10] Name this Chinese designer of a glass-and-steel pyramid for the Louvre in Paris.

ANSWER: Ieoh Ming **Pei**

[10] Pei's first project was 131 Ponce de Leon Avenue in this southern city. This city is home to the largest aquarium in the United States, which required a design for massive whale shark tanks.

ANSWER: **Atlanta**

[10] Pei's firm designed the layout for L'Enfant Plaza, a complex in this city.

ANSWER: **Washington**, D.C.

12. The wave function of this system is sinusoidal inside a certain region and zero everywhere else. For 10 points each:

[10] Name this system in which a particle is confined in a given space by a potential that is zero inside and infinite everywhere else.

ANSWER: **infinite square well** (prompt on partial answer; accept **particle in a box**, accept **infinite potential well**)

[10] This other exactly-solvable system in quantum mechanics has a potential proportional to distance squared. It can be solved with ladder operators or algebraically.

ANSWER: quantum **harmonic oscillator** (prompt on "oscillator")

[10] Those systems are both solved using this central equation of quantum mechanics. Named for a German physicist, it sets the Hamiltonian times the wave function equal to the energy eigenvalues of the wave function.

ANSWER: **Schrödinger** equation

13. The founder of this empire was supposedly the child of Mama Quilla and either Inti or Viracocha. For 10 points each:

[10] Name this empire that was destroyed by Francisco Pizarro, and whose last emperor who held power was Atahualpa.

ANSWER: **Incan** Empire

[10] Atahualpa offered to fill an entire room with this resource if he was not killed. The Incans filled the room, but he was still killed.

ANSWER: **Gold** [or **Oro**]

[10] A few years after Atahualpa's death, the Spanish set up this territory that encompassed much of the Incan territory. Atahualpa's successor Tupac Amaru would be killed here by its longtime viceroy Francisco de Toledo.

ANSWER: Viceroyalty of Peru [do not accept or prompt on "Peru"]

14. The Great Barrier Reef lies off the east coast of this province. For 10 points each:

[10] Name this Australian state that lies north of New South Wales with capital at Brisbane.

ANSWER: Queensland

[10] This body of water lies to the west of northern Queensland and is shared with the Northern Territory. It is bounded to the east by the Torres Strait, which passes between Queensland and New Guinea.

ANSWER: Gulf of Carpentaria

[10] This city in the north of Queensland lies close to Barron Gorge National park and is the northern terminus of the Bruce Highway, which starts in Brisbane.

ANSWER: Cairns

15. Kett's Rebellion was mostly a response to this movement. For 10 points each:

[10] Name this movement in which large land holders cut off small farmers from formerly open fields.

ANSWER: Enclosure Movement

[10] The enclosure movement was developed largely under this man and his father. He had six wives including Catherine Parr and Anne Boleyn and was succeeded by his son Edward VI.

ANSWER: Henry VIII (prompt on "Henry")

[10] This long time Lord Chancellor under Henry VIII imposed an income tax on wealthy landowners with his subsidy tax. This advisor also set up the Field of the Cloth of Gold.

ANSWER: Cardinal Thomas Wolsey

16. Lithium diisopropylamide is one type of these substances. For 10 points each:

[10] Name these substances with an extremely high pH that are formed from the combination of two other substances with pH above 7.

ANSWER: superbase (prompt on "base")

[10] Superbases are way above pH 7, unlike these substances that have pH levels below 7, like HCl.

ANSWER: acids

[10] The evil company Monsanto found this acid to be able to be produced easily in the Monsanto Process. It can also be produced through the Cativa process.

ANSWER: acetic acid

17. The speaker of this poem addresses figures such as the "groom of totemic guanacos" and tells them that "I come to speak for your dead mouths." For 10 points each:

[10] Name this section of the *Canto General* which beseeches "arise to be born with me, my brother" and imagines the dead residents of the titular ruins.

ANSWER: The Heights of Macchu Picchu (accept *Las Alturas de Macchu Picchu* or anything indicating that it is the Second Canto)

[10] This Chilean poet penned the Canto General and wrote "tonight I can write the saddest lines" in his poem "Song of Despair."

ANSWER: Pablo Neruda (or Neftali Ricardo Reyes Basoalto)

[10] Neruda also wrote 100 Love poems in this form. An English variety of this fourteen-line poetic form is the Spenserian, and Shakespeare wrote a bunch of them too.

ANSWER: sonnet

18. One section of this text divides friendship into friendships of pleasure, friendships of utility, and friendships of virtue, and argues for the latter. For 10 points each:

[10] Name this philosophical text that presents a way to reach *eudaimonia* or “happiness.”

ANSWER: **Nicomachean Ethics**

[10] *Nicomachean Ethics* was a work by this student of Plato, who also wrote the *Poetics*.

ANSWER: **Aristotle**

[10] In his *Poetics*, Aristotle defined this term as the point in a work where a character makes a major discovery he was previously unaware of.

ANSWER: **anagnorisis**

19. This treaty established a boundary at the St. Croix River, but did not deal with monetary claims for captured slaves. For 10 points each:

[10] Name this treaty that also did not deal with the issue of impressment and was signed to resolve leftover disputes after the 1783 Treaty of Paris.

ANSWER: **Jay’s Treaty** (or **Treaty of Amity, Commerce, and Navigation**, Between His Britannic Majesty and The United States of America)

[10] John Jay was not solely known for his work on his eponymous treaty, but also for being the first holder of this post, that would later be held by John Marshall and Earl Warren.

ANSWER: **Chief Justice** of the Supreme Court

[10] Jay was also the governor of this state. The governorship of this state was also held by non-brothers George and DeWitt Clinton in the nineteenth century.

ANSWER: **New York**

20. Name some prominent religious cults and cult leaders. For 10 points each:

[10] This man founded the Branch Davidians before burning himself and his followers to death in a compound in Waco, Texas in 1993.

ANSWER: David **Koresh**

[10] Congressman Leo Ryan was killed while visiting Jonestown in 1978, after 918 people had died drinking this substance, which had been laced with cyanide.

ANSWER: **Flavor Aid** (or **Kool-Aid**)

[10] This cult founded by Marshall Applewhite believed they could kill themselves to board a spaceship following Comet Hale–Bopp that would take them to another planet.

ANSWER: **Heaven’s Gate**