

**2015 George Oppen: Questions courtesy of Anne Hathaway's cow-milking fingers**  
**Written by Auroni Gupta, Stephen Eltinge, and Mike Cheyne**  
**ROUND 3**

**TOSSUPS**

**1. The first act of an opera by this composer includes a duet in F major and ternary form over a love melody in 9/8 time. This composer adjusted a tenor role to a baritone one for a performance by Mattia Battistini of one of his operas, which begins and ends with a Christmas carol sung to, and by, six children. A lyric soprano sings the role of the title male soldier, who announces that he is drunk, in an aria from this composer's sequel to Mozart's *The Marriage of Figaro*. The title character of an opera by this composer asks to spare her statue of Eros despite agreeing to (\*) destroy all her possessions. The title character of an opera by this composer sings "Pourquoi me reveiller?" during a recitation of poetry by Ossian, soon before asking Albert to borrow two pistols. This composer's opera about Athanael's attempt to Christianize the title courtesan contains an entr'acte played by violin and orchestra. For 10 points, name this French composer of the operas *Werther* and *Manon*, who is best-known for the "Meditation" from his opera *Thais*.**

ANSWER: Jules Massenet [or Jules Emile Frederic Massenet]

**2. In a poem by this author, the "sheep bell and the linnets" sing between "those two black infinities between which our brief life flashes a moment and goes out." Another of this author's poems describes an entity that "sometimes shoots up taller like an india-rubber ball," and "sometimes gets so little that there's none of him at all." This author ended a collection with an address "To Any Reader" warning them that its subjects cannot be "lured out of this book." This author compared a bed to a boat, and imagined that we visit the "Land of (\*) Nod" when we go to sleep, in that collection, which includes his poem "My Shadow." This author's most famous poem declares "this be the verse you grave for me," and ends "Home is the sailor, home from sea, and the hunter home from the hill." One of his novels includes a poem of sorts that goes "Fifteen men on the dead man's chest, Yo-ho-ho, and a bottle of rum!" For 10 points, name this poet of "Requiem" and *A Child's Garden of Verses*, whose novels include *The Master of Ballantrae* and *Treasure Island*.**

ANSWER: Robert Louis Stevenson

**3. A member of this organization ordered unrest to be quelled by militia armed with thirteen rounds of buckshot cartridges. This organization was resurrected under the banner of Wheaton College president Jonathan Blanchard. A governor belonging to this organization, who abolished imprisonment of women for debt, was named William A. Palmer. A leader of this political party may have fabricated the "Give me liberty or give me death!" quote in his biography of Patrick Henry. The disappearance and possible murder of (\*) William Morgan in upstate New York fueled the creation of this party. Amos Ellmaker's brief foray into politics was as a vice-presidential candidate for this party, which organized the first presidential nominating convention in US history. This party won Vermont in the 1832 presidential election, under its candidate William Wirt. For 10 points, name this earliest third party in the United States, a single-issue party opposed to a certain secret society.**

ANSWER: Anti-Masonic Party [accept Whig Party on a first sentence buzz]

**4. Rychnovsky determined a way to analyze a subtype of these compounds in 13-C NMR, finding that, depending on the configuration, they exhibit peaks at either 19 and 30 ppm or 25 ppm. Acetonide is a common protecting group for these compounds. Trimethyl phosphite attacks the sulfur atom of a cyclic intermediate that forms from the reaction of thiophosgene and one of these compounds in the Corey-Winter reaction. A racemic mixture of these compounds is produced by using NMO as a re-oxidant in the Upjohn reaction. The most common usage of (\*) periodic acid is to cleave these compounds into aldehyde or ketone fragments. They are made asymmetrically by treating alkenes with osmium tetroxide in the Sharpless reaction. Under acidic conditions, these compounds transform into carbonyl compounds in the 1,2-pinacol rearrangement. The most frequently-used of these compounds in industry, ethylene glycol, is of the "vicinal" type because the hydroxyl groups are attached to adjacent atoms. For 10 points, name these compounds containing two "OH" groups.**

ANSWER: diols [or glycols]

5. This economist created a model whose convergent case occurs when the demand curve is more elastic than the supply curve, and whose divergent case occurs when the opposite is true. A growth model formulated by this man specifies a "technical progress function" dependent on the rate of capital accumulation. This coiner of the term "convenience yield" assisted Gunnar Myrdal in refining the theory of circular cumulative causation. This man posited that real wage and capital per workers grow over time, whereas output per worker, capital/output ratio, rate of return to capital, and share of capital and labor in net income are constant, in a set of six observations that popularized the term (\*) "stylized fact." This developer of the cobweb model is the alphabetically later formulator of a metric that accounts for those who are made better off by an action compensating those who are worse off, thus having less stringent criteria than Pareto efficiency. For 10 points, name this Cambridge economist who names a type of efficiency with John Hicks.

ANSWER: Nicholas Kaldor [or Baron Kaldor; or Kaldor Miklos]

6. This deity received no punishment setting a package down near a pool where she bathed. This deity took revenge on a series of unhelpful sea creatures by inflicting a series of injuries that explain why the flounder is flat, why the turtle has a lump on its back, and why the whale has a split tail. This goddess once tried to climb a tree, but one of the branches broke off and split into a bunch of breadfruit groves where it landed. This goddess's lover, an eel, instructed her to decapitate him and told her how best to use the coconut tree that grew from the eel's headless neck. In one story, this goddess escapes her abusive husband and first goes to the Sun, but finds it too hot, so she rides a rainbow to the (\*) Moon, where she can be seen holding a gigantic gourd beating out *tapas* cloth. The wing of this goddess's pet bird baits the hook with which her husband fishes up the Hawaiian Islands. For 10 points, name this omnipresent Polynesian goddess of the moon and childbirth, who is sometimes the sister or wife of Maui.

ANSWER: Hina [or Sina; accept answers that start with Hina or Sina and then continue with other syllables, I'm too lazy to hunt down all 1000 alternate answers]

7. A law enforcement officer in this city invented a number of astronomical clocks, as well as the first stopwatch. An attack on this city was given the code-name "Moonlight Sonata." Because London was full of angry merchants and agitated crowds, Margaret of Anjou pressured Henry VI to move the royal court to this city from 1456-59 during the Wars of the Roses. Royalist soldiers captured during the Battle of Birmingham during the English Civil War were taken as prisoners to this city, inspiring the idiom "to send someone to [this city]," meaning to deliberately ostracize them. Joseph Goebbels sarcastically used this city as a verb signifying (\*) total destruction following a November 1940 event in which the Luftwaffe carpeted it with incendiary bombs, destroying its late 14th century cathedral. This city was the site of a legendary protest against high taxation imposed by Leofric, Earl of Mercia, during which a voyeuristic tailor named Tom was stricken blind. For 10 points, name this central English city where Lady Godiva went on her famous naked ride.

ANSWER: Coventry

8. This author wrote a story in which a terminally-ill man develops a habit of shouting "CUNT!" with strong New England accent, so it comes out as "KANT!" In an essay, this author credited the children's book *Johnny Tremain* with sparking his interest in becoming a writer. The brooding family man Morse and the suffering artist Aldo Cummings suddenly snap out of their respective daydreams when they realize that two canoeing girls are in danger of careening down a cataract in this author's story "The Falls." His inaugural collection features a psychopathic Vietnam vet bodyguard who cuts the hands off a boy who steals candy in its title story, and ends with a novella about an underclass of Americans with (\*) birth defects known as the Flawed, titled "Bounty." Janet loses her job as an actress playing a cavewoman at a historical reenactment theme park in the title story of this author's best-known collection. For 10 points, name this deadpan contemporary author of *Tenth of December*, *CivilWarLand in Bad Decline*, and *Pastoralia*.

ANSWER: George Saunders

9. Yousef Saad, one of the most highly cited researchers of these objects, is the author of a textbook on "Iterative Methods for" them. Yifan Hu and University of Florida professor Tim Davis maintain a database of these objects for use in evaluating the performance of algorithms on them. The Cuthill-McKee algorithm reorders the entries in these objects to reduce their bandwidth, which one often does before storing them in skyline format. The "eye" and "kron" functions in Python's SciPy package generate these objects. The Yale format uses three (\*) arrays to store these things and is similar to the Compressed Row method. The "dictionary of

keys" method stores these objects as maps from a row-column pair to an entry, rather than as an array of arrays. This class of matrices includes adjacency matrices, loosely coupled Hamiltonians, and other systems with low connectivity between elements. For 10 points, name these matrices in which most of the elements are zero.

ANSWER: sparse matrices [or sparse linear systems; prompt on matrices]

**10. In the rustic, hilly landscape at the background of this painting, a ramp connects a house to a structure under construction. On the staggering fortyish studies for this painting, the artist scribbled some drafts of Petrarchan love sonnets. This was the first full painting that its artist created in a place where he supplemented a ceiling decoration by Il Sodoma. In this painting, a halo and streams of light surround a downward-facing Holy Spirit, next to four putti holding open books. A man leaning over a balustrade at the bottom left of this painting is modeled after the artist's friend Donato (\*) Bramante. Dante wears a red robe and a laurel wreath in this painting, behind the gold-bedecked Pope Sixtus IV. To the right of this painting, the artist painted the sacred mountain of Apollo and the Muses in his canvas *Parnassus*. This painting shows Christ enthroned in heaven above theologians arguing about the nature of transubstantiation. For 10 points, name this painting located in the Stanza della Segnatura opposite *The School of Athens*, created by Raphael.**

ANSWER: *La disputa* [or *The Disputation of the Sacrament*; or *La disputa del sacramento*]

**11. This quantity grows linearly in a system with zero energy density according to the Milne model. The energy density of a radiation-dominated universe is inversely proportional to the fourth power of this quantity, while vacuum energy density is entirely independent of it. This quantity is squared and multiplied by the spatial components of a homogeneous and isotropic but time-dependent metric whose parameter  $k$  determines the sign of the curvature of space. The time evolution of this quantity is governed by the (\*) Friedmann equations, from which one can extract Hubble's constant as the logarithmic time derivative of this quantity. It increases monotonically in time, and it goes to zero at a point in the Robertson-Walker metric that we now interpret as the Big Bang. For 10 points, identify this cosmological quantity, symbolized  $a$ , which is a measure of the relative size of the universe.**

ANSWER: cosmic scale factor [or Robertson-Walker scale factor; prompt on answers mentioning the size of the universe]

**12. *New Republic* columnist David Grossman published a disparaging review of this show, claiming that it is "openly conservative." A character on this show who describes herself as "the Paris of people" draws the attention of an ever-growing group of psychologists at a dinner party. Ed Helms guest-starred on this show as a character named Jack Danger who insists that his last name is pronounced "Donger." A character on this show, who writes weekly emails ranking pizza places on criteria including (\*) mouth feel, is shown stepping on a mousetrap in its opening credits. Craig Robinson has guest-starred twice on this show as Doug Judy, a thief who only steals Pontiacs. Other actors on this show include Melissa Fumero as Amy Santiago and Andre Braugher as Captain Ray Holt. For 10 points, name this Fox show that stars Andy Samberg as Jake Peralta, a detective in the title New York precinct.**

ANSWER: Brooklyn Nine-Nine

**13. Much of an eighth-century text called the *Waves of Beauty* focuses on enumerating the positive aspects of this being. The philosopher Adi Shankara was told by this being that he had the power to remove a corpse from a road. A form of this being named *kundalini* awakens inside a person and helps them achieve the state of *yoga*. A different form of this being is worshiped on each of the nine nights of Navratri. The third-largest denomination of Hinduism, following Vaishnava and Shaivism, focuses on worshiping this being. The Maya Devi temple in Haridwar, where the heart and the naval of Sati fell to the Earth, and Kamakhya in the Himalayas, where the same thing happened to Sati's vulva, are considered one of the 51 "peetha" dedicated to this being's worship. It is said that without this being, (\*) Shiva is unable to create anything. Parvati is considered a gentle aspect of this being, whose chief manifestation is Durga. For 10 points, name this feminine cosmic power and energy in Hinduism, of whom all Hindu goddesses are merely forms.**

ANSWER: Shakti [or Devi; or Adi Parashakti; prompt on any of the following until "all Hindu goddesses" is read: Durga, Kali, Parvati, Sati, Radha, Sita, Lakshmi]

**14. The alienation from society felt by members of this ethnic group is heightened using the "perambulant model" in the play *No Sugar* by Jack Davis. The boar hunting policeman Senior Constable Farrell sodomizes**

inmates of this ethnicity in a novel in which Reverend Mr. A. J. Neville is convinced of their racial inferiority. A female activist for full political equality for this ethnic group published the groundbreaking collection *We Are Going* and discarded her name Kath Walker for a name of this type. A character of this ethnicity who creates experimental religious paintings, named Alf Dubbo, lives in Sarsaparilla as one of the metaphorical (\*) "Riders in the Chariot." A character who is half-white and half-this ethnicity enlists the aid of his uncle Tabidgi and his brother Mort to commit a string of racially-motivated murders as revenge for being separated from his family as one of the Stolen children. For 10 points, name this ethnicity of Jimmie Blacksmith, an indigenous character created by Australian author Thomas Keneally.

ANSWER: Aborigines [or Aboriginal Australians; or specific tribes, such as Quandamooka or Noongar]

15. An empress of this kingdom was buried with her hair covering her face and rice husks stuffed in her mouth so that she couldn't complain from beyond the grave. This kingdom suffered a coup d'etat coinciding with its regent's trip to the Gaoping Tombs to pay respects to his adoptive father. A court official of this dynasty standardized the "nine-rank" civil service examination system. The eminent mathematician Liu Hui, who developed an algorithm to compute pi to several digits, lived in this kingdom. This empire's forces destroyed the mountain fortress of Hwando during its successful war against the Goguryeo Kingdom. This empire held off an assault on its western borders at (\*) Mount Qi, ending the fifth campaign mounted by the enemy strategist Zhuge Liang. The Sima family usurped control over this kingdom, beginning the Jin dynasty. This kingdom took its name from the dukedom controlled by the chancellor to the last Han emperor. For 10 points, name this state during the Three Kingdoms period which was ruled by the descendants of Cao Cao and warred with the rival Shu and Wu states.

ANSWER: Wei dynasty

16. A poem by this author calls Christ the holder of the "world's aviation record" due to his place in Heaven. This author wrote a love poem stating that when the addressee's memory of him fades, then his blood will flood the universe, giving "more lively brightness to the sun, more color to flowers." Another of this author's poems declares that "the past remains the past / love remains lost," before issuing for the final time, the refrain: "the night is a clock chiming / the days go by not I." The line "in the end you've had enough of the ancient world" opens this author's poetic masterpiece, which ends with the enigmatic command "sun (\*) slit throat." This author paid tribute to his lover Marie Laurencin in his poem about a structure that spans the Seine, titled "Mirabeau Bridge." This author wrote poems shaped like a heart, a watch, and the Eiffel Tower in one collection, and began another with the long poem "Zone." For 10 points, name this author of *Calligrammes* and *Alcools*, a pioneering French surrealist poet.

ANSWER: Guillaume Apollinaire [or Wilhelm Albert Włodzimierz Apollinary Kostrowicki]

17. Near the end of this book, the author says that the followers of Aristotle satisfied with the Greek's grasp of nature are like ivies which never strive to rise above the trees that sustain them. In the second part of this book, the narrator observes that buildings planned by one central architect are far superior to those that just organically get built, and resolves to take a similar approach to his philosophy. In the third part of this book, the narrator resolves to conquer himself rather than fortune, to always be resolute in his actions, and to always obey the laws of his country. This book, which traces its author's intellectual development to a crucial night he spent in a (\*) stove-heated room, observes that just as adding up to 180 degrees is an essential property of a triangle, so too is existence an essential property of God. This book contains the famous statement "Je pense, donc je suis," which the author's later *Principles of Philosophy* renders as "cogito ergo sum." For 10 points, name this treatise which lays out the rigorous deductive reasoning used by its author Rene Descartes.

ANSWER: Discourse on Method [or Discourse on the Method of Rightly Conducting One's Reason and of Seeking Truth in the Sciences; or Discours de la methode pour bien conduire sa raison, et chercher la v rit  dans les sciences]

18. Whereas clindamycin kills anaerobes above this structure, metronidazole eradicates them below it. In stage III of the Ann Arbor scale, Hodgkin's lymphoma has spread to both sides of this structure. Congenital abnormalities in this structure take the form of conditions named after Bochdalek or Morgagni. This structure is compromised in a sliding or rolling hiatal hernia. C3, C4, and C5 are the points of origin of the (\*) phrenic nerve, which terminates at this structure. Hoover's sign detects the flatness of this structure in COPD. This structure works in concert with shoulder muscles and the external intercostal muscles to increase the size of the

ANSWER: thoracic **diaphragm**

**ANSWER: Juan Carlos I** [or **Juan Carlos** Alfonso VÃ-ctor Maria de Borbon y Borbon-Dos Sicilias]

ANSWER: Orlande de **Lassus** [or Roland de **Lassus**; or Orlando di **Lasso**; or Orlandus **Lassus**; or Roland de **Lattre**]

ANSWER: **cantatas**

[10] In a parliamentary debate over this 1967 legislative action, Roy Jenkins stated that "those who suffer from this disability carry a great weight of shame all their lives." This act applied to men of age 21 or greater in England and Wales.

ANSWER: **decriminalization of homosexuality** [accept equivalents, accept **making homosexuality legal**; accept **Sexual Offences Act** of 1967]

[10] Jenkins chaired his namesake Commission while serving as an adviser to this Labour Prime Minister, who took part in the invasions of Afghanistan and Iraq.

ANSWER: Tony **Blair** [or Anthony Charles Lynton **Blair**]

2. Birkhoff's theorem asserts that this physicist's metric is the unique spherically symmetric solution to the Einstein field equations. For 10 points each:

[10] Name this physicist. His namesake "radius," at which the escape velocity of a particular amount of matter equals the speed of light, gives the size of a black hole's event horizon.

ANSWER: Karl **Schwarzschild**

[10] The maximally extended Schwarzschild metric is best described using these coordinates. In these coordinates, the event horizon is a null surface, and a spacetime diagram shows both the black hole and its paired white hole.

ANSWER: **Kruskal**-Szekeres coordinates

[10] The Schwarzschild metric describes pretty boring black holes. The more interesting Kerr metric describes rotating black holes, while the Reissner-Nordstrom metric describes black holes that possess this physical property.

ANSWER: electric **charge**

3. In December 2013, this leader personally helped push a car stuck in snow during a cold snap that hit his country's capital. For 10 points each:

[10] Name this leader who commuted the sentence of female parliament leader and civil rights activist Toujan al-Faisal. To promote tourism, he established a Special Economic Zone in the port of Aqaba.

ANSWER: **Abdullah II** [or **Abdullah II** ibn al-Hussein; prompt on **Abdullah**]

[10] Abdullah II is the current ruler of the Hashemite dynasty in this Middle Eastern country.

ANSWER: **Jordan** [or Hashemite Kingdom of **Jordan**; or al-Mamlakah al-**Urduniyah** al-Hashimiyah]

[10] Abdullah allowed the 2012 establishment of this refugee camp, the world's second largest, which has grown to become Jordan's fourth largest city due to the influx of people fleeing the Syrian civil war.

ANSWER: **Zaatari** refugee camp

4. Name these painters of the Quattrocento, or 15th century, for 10 points each.

[10] A 1980s restoration removed the fig leaves censoring *The Expulsion from the Garden of Eden*, a fresco by this artist who showed St. Peter fetching money from a fish in *The Tribute Money*.

ANSWER: **Masaccio** [or Tommaso di Ser **Giovanni** di Simone]

[10] This artist painted a portrait of the "Wolf of Rimini," a *condottiero* named Sigismondo Pandolfo Malatesta, but he is far better known for depicting Constantine's dream in a fresco from his series *The History of the True Cross*.

ANSWER: **Piero** della Francesca [or Piero della **Francesca**]

[10] This artist incorporated resplendently-decorated portraits of the Medici in his painting *The Journey of the Magi*, the centerpiece of his decorations for the Palazzo Medici in Florence.

ANSWER: Benozzo **Gozzoli**

5. "In one of this author's most darkly comic moments, the cook Vatel stabs a sword through his heart for not having ordered enough seafood for a banquet, just moments before the needed flood of shipments come in. For 10 points each:.

[10] Name this aristocratic woman who chronicled the latter half of seventeenth century France in a series of over 1100 letters to her daughter.

ANSWER: Mme de **Sevigne** [or Marie de **Rabutin-Chantal**, marquise de Sevigne]

[10] Mme de Sevigne was close friends with the writer Madame de La Fayette, who wrote this first French historical novel, about a noblewoman in the court of Henry II who is torn between her husband and the strapping Duke de Nemours.

ANSWER: *The* **Princess of Cleves** [or *La* **Princesse de Cleves**]

[10] The son-in-law of Mme de Sevigne, the Comte de Grignan, in his capacity as Lieutenant-Governor of Provence was in charge of this mysterious prisoner with distinctive headgear, whom Voltaire suspected of being the illegitimate brother of Louis XIV. In *The Vicomte of Bragelonne*, the Three Musketeers encounter this man, who is presumed to be the twin brother of Louis.

ANSWER: Man in the Iron Mask [or *L'Homme au Masque de Fer*; or Eustache Dauger]"

6. The esteemed Egyptologist Adolf Erman published a list of similarities between the New Kingdom text *Instruction of Amenemope* and this book, the only one to mention the otherwise-unknown king Lemuel. For 10 points each:

[10] Identify this Biblical book which forms the "poetic" portion of the Ketuvim along with Psalms and Job, and is filled with wise sayings.

ANSWER: Book of Proverbs [or Proverbs of Solomon; or Paroimoi; or Proverbia]

[10] Proverbs 26:11 likens fools repeating their folly to this specific disgusting animal behavior.

ANSWER: a dog returning to its vomit [accept anything along those lines]

[10] According to a superscription, Proverbs 25-29, including the dog-vomiting aphorism, was written by Solomon and copied by this king of Judah, who wore a sackcloth in anguish during the Assyrian siege of Jerusalem led by Sennacherib, but was comforted by the prophet Isaiah. He forbade idol worship in the Temple of Jerusalem.

ANSWER: Hezekiah

7. After Lord Boutetort dissolved the House of Burgesses, its members gathered at Raleigh Tavern to mope about these acts. For 10 points each:

[10] Name this series of acts passed by a namesake Chancellor of the Exchequer, which froze the New York Assembly for poor compliance with the Quartering Act, and imposed a series of duties on lead, glass, paper, paint, and tea.

ANSWER: Townshend Acts

[10] This earlier act accompanied the repeal of the Stamp Act, and stated that Parliament had the same right to levy taxes in the colonies as it had in Britain.

ANSWER: Declaratory Act

[10] The Stamp Act repeal, as well as the Declaratory Act and a new act reducing the tax burden of the Sugar Act, were all passed under the first ministry of this politician, who led a faction of Whigs opposed to the suppression of the Revolutionary War.

ANSWER: Marquess of Rockingham [or Charles Watson-Wentworth, 2nd Marquess of Rockingham; or Viscount Higham; or Earl of Malton]

8. Harrison Birtwistle was a founding member of a British musical ensemble assembled to play this composition, in which the entire ensemble consisting of a flute, a piccolo, a clarinet, a bass clarinet, a violin, a viola, a cello, and a piano come together for the final number, "O alter duft." For 10 points each:

[10] Name this melodrama in which a narrator using Sprechstimme sings three sets of German-translated poems by Albert Giraud.

ANSWER: Pierrot Lunaire [or *Dreimal sieben Gedichte aus Albert Girauds "Pierrot lunaire"*]

[10] This composer of the Second Viennese School composed *Pierrot Lunaire* and developed the twelve-tone technique.

ANSWER: Arnold Schoenberg

[10] The second of Schoenberg's four pieces of this type quotes a popular tune about the Viennese bagpiper Augustin and unusually features, in its last two movements, a soprano singing poems by Stefan George.

ANSWER: string quartets

9. The "Lodge" of this person runs "From the Pole to the Tropics" according to the poem "The Widow at Windsor." For 10 points each:

[10] Name this person. A poem beseeching "Lord God of Hosts, be with us yet, Lest we forget—lest we forget!," titled "Recessional," was written for this person.

ANSWER: Queen Victoria [or Misses Victorier; or Alexandrina Victoria; prompt on the Queen or similar answers]

[10] This British-Indian author of "Recessional" included "The Widow at Windsor" among his Barrack-Room Ballads, along with "Mandalay" and "Gunga Din."

ANSWER: Rudyard Kipling [or Joseph Rudyard Kipling]

[10] In this other poem from *Barrack-Room Ballads*, the title drunken soldier gets kicked out of bars and theaters, and feels underappreciated by society, relative to his civilian counterpart "Mister Atkins."

ANSWER: Tommy

10. Proteins such as ataxia telangiectasia belong to this family of enzymes, whose p110-alpha subunit is almost always mutated in glioblastomas, and which can be specifically inhibited by the fungal metabolite wortmannin. For 10 points each:

[10] Name these enzymes which bind to AMPA receptors in long-term potentiation, and participate in a signaling pathway in which they phosphorylate Akt, which in turn phosphorylates mammalian target of rapamycin.

ANSWER: **PI-3Ks** [or **phosphatidylinositol-4,5-bisphosphate 3-kinase**; or **phosphatidylinositide 3-kinases**; or **phosphatidylinositol-3-kinases**; or **PI 3-kinases**]

[10] Both this compound and a namesake "-like growth factor" signal through the PI-3K/Akt/mTOR pathway. This hormone promotes the production of glycogen when blood sugar levels are high.

ANSWER: **insulin**

[10] The C2-gamma isoform of the third class of PI-3Ks is only expressed in these cells, which are abundant in smooth endoplasmic reticulum, and organized into plates separated by sinusoids. These cells synthesize ceruloplasmin, transferrin, serum albumin, and fibrinogen.

ANSWER: **hepatocytes** [prompt on **liver** cells]

11. In a mild critique of imperialism and rapid scientific progress, this essay observes that man, "having enslaved the elements, himself remains a slave." For 10 points each:

[10] Identify this essay, a response to an article by Thomas Love Peacock, which ends by hailing practitioners of the title activity as the "trumpets which sing to battle, and feel not what they inspire," the "hierophants of an unapprehended inspiration," and the "unacknowledged legislators of the world."

ANSWER: "A **Defence of Poetry**"

[10] This author of "A Defence of Poetry" tried to abide by its precepts in long poems like "Mont Blanc" and shorter lyrics like "To a Skylark" and "Ode to the West Wind."

ANSWER: Percy Bysshe **Shelley**

[10] Shelley explains that poets and sages invoke the notions of "Demon," "Ghost," and "Heaven" in their encounters with the title creative force of this 1817 poem, addressed to "the awful shadow of some unseen Power" that "dost consecrate / With thine own hues all thou dost shine upon / Of human thought or form."

ANSWER: "**Hymn to Intellectual Beauty**"

12. The only reference to Mesthles the Maeonian occurs in this section, which begins with men like the Zelians and Pelasgians, then radiates outwards to enumerate the Thracians, Paphlagonians, Phrygians, and Carians. For 10 points each:

[10] Identify this section of Book Two of the *Iliad*, a list which is far shorter and less-detailed than its counterpart, the Catalogue of Ships.

ANSWER: **Trojan** Catalogue [or **Trojan** Battle Order; or **Troikos diakosmos**; accept descriptive answers conveying that this is a list of **Trojans**]

[10] The Trojans array their forces after this female messenger god and personifier of the rainbow visits the city and compares the advancing Greeks to leaves and sand.

ANSWER: **Iris**

[10] The final portion of the catalogue lists the brothers Chromis and Ennomus as representatives of this allied kingdom, whose monarch Telephus suffered a wound after the Greek fleet mistakenly landed there rather than Troy.

ANSWER: **Mysia** [or the **Mysians**]

13. Many politicians from this party were caught partaking in insider trading in the Recruit scandal, leading to it losing its majority in the 1993 general election. For 10 points each:

[10] Name this conservative Japanese political party which has been in power since 1955, apart from interruptions between 1993-94 and 2009-12.

ANSWER: **Liberal Democratic Party** [or **LDP**; or **Jiminto**; or **Jiyu-Minshuto**]

[10] This LDP prime minister, who presided over Japan's economic recovery from 1964-1972, became the first Asian winner of the Nobel Peace Prize to accept the award, which he won for pushing Japan to sign the Nuclear Non-Proliferation Treaty.

ANSWER: Eisaku **Sato** [or **Sato** Eisaku]

[10] Sato worked with presidents Lyndon Johnson and Richard Nixon to accomplish this territorial goal, which happened in 1972, with the caveat that the U.S. could still operate military bases in the location in question.



ANSWER: return of Okinawa to Japan [or repatriation of Okinawa; or synonyms]

14. This player spoke four languages, including Lithuanian and Polish. For 10 points each:

[10] Name this first baseman who, in 1949, was shot by an obsessed fan named Ruth Ann Steinhagen, an incident that inspired the opening of the book *The Natural*. He survived and later was named Comeback Player of the Year.

ANSWER: Edward "Eddie" Waitkus

[10] Waitkus started as a Cub, but was with this team when he was shot. Other notable first basemen for this team have included John Kruk and the waste of money that is Ryan Howard.

ANSWER: Philadelphia Phillies [prompt on Philadelphia]

[10] Waitkus was traded to the Phillies with Hank Borowy, who once had the feat of being the only pitcher to win 10 games for two different teams in two different leagues in the same season, until he was joined by this man who did it with the Indians and Expos.

ANSWER: Bartolo Colon

15. Specific single nucleotide polymorphisms can be identified using dyes such as Cy3 in concert with gold and silver nanoparticles in a form of this technique, which has a fingerprint region of 400-2000 inverse centimeters. For 10 points each:

[10] Name this form of spectroscopy in which light from a near-infrared laser such as Nd:YAG interacts with the phonons of a sample and scatters inelastically. It provides similar information as IR spectroscopy.

ANSWER: Raman spectroscopy [accept all specific forms, as long as they have the word Raman in it; accept SERS; accept SRS; accept CARS; accept TERS; accept SPPERS; accept OTRS; accept SORS]

[10] According to this rule, normal modes in molecules possessing centers of symmetry cannot be both IR and Raman active.

ANSWER: rule of mutual exclusion

[10] Raman spectroscopy has proven that NO<sub>2</sub><sup>+</sup> is an intermediate in the nitration of benzene, which requires both nitric acid and this diprotic strong acid produced using a vanadium oxide catalyst in the contact process.

ANSWER: sulfuric acid [or H<sub>2</sub>SO<sub>4</sub>; or oil of vitriol, if you're from the 14th century]

16. This building's designer chose to construct it in an deserted lane, where, in his own words, "anyone who wanted to pee just did it against this wall." For 10 points each:

[10] Identify this Utrecht residence consisting of a second floor that has no separate rooms, per se, unless sliding panels are moved to partition the open space.

ANSWER: Rietveld Schroder House

[10] The Rietveld Schroder House is the best-known architectural product of this Dutch art movement that championed simple abstract geometric forms and primary colors, like those seen in the paintings of its best-known proponent, Piet Mondrian.

ANSWER: De Stijl [or neoplasticism]

[10] This Austrian-American architect was very briefly part of De Stijl, but is far better known for hoping that people would live in a flattened, biomorphic, infinite egg-shell like residence that he termed the Endless House, and for co-designing the Shrine of the Book to house the Dead Sea Scrolls in Jerusalem.

ANSWER: Frederick Kiesler

17. MODERATOR NOTE: Only read the underlined portion in the first part if missed.

After completing this task, which was ordered by the Russian general Golz, the protagonist imagines settling in for a hot bath at the Florida hotel, then begins reminiscing about his "education" at Gaylord's. For 10 points each:

[10] Name this pivotal event of a 1940 novel, nearly sabotaged the night before by Pablo, which in actuality results in a huge chunk of steel shrapnel instantly killing Anselmo and the protagonist shattering his leg in the ensuing retreat, forcing him to be separated from his lover Maria.

ANSWER: the bridge operation in *For Whom the Bell Tolls* [or blowing up the bridge; or destroying the bridge; accept equivalents conveying the demolition of a bridge]

[10] Robert Jordan joins with a guerilla band led by Pilar to destroy a Fascist-controlled bridge during the Spanish Civil War in this novel by Ernest Hemingway.

ANSWER: For Whom the Bell Tolls

[10] Hemingway's other Spanish Civil War fiction includes the story "Night Before Battle," which was his final submission to this magazine, for which he wrote the article "Monologue to the Maestro" advising young writers to

"stop when you are going good." Gay Talese's pieces for this magazine, such as "The Silent Season of a Hero" and "Frank Sinatra Has a Cold," were pioneering works of New Journalism and creative nonfiction.

ANSWER: Esquire

18. Identify the following about satellites used in observational astronomy, for 10 points each.

[10] This telescope, to be launched in 2018, will use mid-infrared imaging to study initial galaxy formation from just after the Big Bang. It is the successor to the Hubble Space Telescope.

ANSWER: James Webb Space Telescope

[10] The Hipparcos satellite tracked over 100,000 stars, measuring their proper motion and this property. This property is the change in an object's angle of inclination between two different lines of sight.

ANSWER: parallax

[10] This successor to Hipparcos was launched in 2013. Its five-year mission is to catalog roughly one billion nearby stars, or about 1% of the stars in the Milky Way galaxy.

ANSWER: Gaia

19. This dialogue calls natural divisions the ones that "carve reality at the joints," and likens the soul a charioteer driving a chariot pulled by a black and white horse. For 10 points each:

[10] Name this meandering middle Socratic dialogue which starts talking about romantic and sexual love, drifts into discussing the soul, and ends with Socrates defining what makes a good rhetorician. The title character of this dialogue openly flirts with the much older Socrates.

ANSWER: Phaedrus

[10] Phaedrus gives the first speech in this better-known dialogue about love, which takes place at the namesake drinking party.

ANSWER: Symposium

[10] In *Phaedrus*, Socrates scores a rhetorical victory over Lysias and himself by arguing that this trait is actually a divine gift.

ANSWER: madness [accept word forms and synonyms]

20. The British ambassador Lord Eliot brokered an agreement to end the indiscriminate executions by firing squad employed by both sides in this war. For 10 points each:

[10] Name this 1833-39 civil war in which the Basques threw their lot in with the younger brother of Ferdinand VII, the namesake pretender to the throne.

ANSWER: First Carlist War [prompt on partial answer]

[10] The First Carlist War ended with the "Embrace at Bergara," between the Carlist general Rafael Maroto and this Liberal general, a "Prince of Vergara" and "Duke of La Victoria" who served thrice as prime minister of Spain.

ANSWER: Baldomero Espartero [or Don Joaquin Baldomero Fernandez-Espartero y Alvarez de Toro, 1st Prince of Vergara, 1st Duke of la Victoria, 1st Duke of Morella, 1st Count of Luchana, 1st Viscount of Banderas]

[10] The Carlists refused to recognize the legitimacy of the second Spanish queen with this name, the first of whom married Ferdinand of Aragon.

ANSWER: Isabella

TB. This story describes a German giant who fattens his victims with meals of "smoke, mist, moonshine, raw potatoes, and sawdust," named Giant Transcendentalist. For 10 points each:

[10] Name this story in which the character of Mr. Smooth-it-away, a parody of the Evangelist from John Bunyan's *Pilgrim's Progress*, grumbles about how easy technology has made the pilgrimage.

ANSWER: "The Celestial Railroad"

[10] In this story by the same author, Rosina returns to her ex-husband Roderick Elliston, and cures him of the title affliction by suggesting that he "forget [him]self in the idea of another."

ANSWER: "Egotism;" or, The Bosom-Serpent"

[10] This author collected his stories "The Celestial Railroad" and "Egotism; or The Bosom-Serpent" in his book *Mosses from an Old Manse*," alongside more famous tales, like "The Birth-Mark" and "Young Goodman Brown."

ANSWER: Nathaniel Hawthorne [or Nathaniel Hathorne]

