



1. Three ships belonging to this group were sunk during their disastrous attempt to interfere in the Trinh-Nguyen war in Vietnam. This group fought two wars with China, losing the Battle of Liaoluo Bay and being expelled from the Pengui Islands in a long war in the 1620s. This group acquired Galle in 1640 to end a cinnamon monopoly. This group's Painan Treaty allowed it to monopolize the gold trade and gradually displace the Aceh Sultanate; earlier, this group caused a furor in Britain by perpetrating the Amboina Massacre. This group was permitted to maintain a settlement on the artificial island of Dejima, which controlled the sole outside access to Japan during the Tokugawa shogunate. This group founded what is now Jakarta under the name Batavia. For 10 points, name this first stock-issuing entity and first multinational corporation in world history, which colonized Indonesia and sent profits back to the staadtholders of the United Republic.

ANSWER: **Dutch East India Company**

019-14-67-11101

2. Due to selective mortality, maternally inherited *Spiroplasma* and *Wolbachia* can distort this quantity in arthropod populations. Eric Charnov proposed that in parasitoids, this quantity varies with host size, extending the Trivers-Willard Hypothesis that it can be adjusted with maternal condition. In small populations, it may be biased by competition between siblings according to W. D. Hamilton's local mate competition hypothesis. The primary, secondary, and tertiary versions of this quantity denote its value at conception, birth, and adulthood, while its operational kind discounts non-mating individuals. Deviations in this quantity favor parents whose offspring counteract the deviation according to Fisher's principle, which explains why this ratio is often close to 1:1. For 10 points, identify this ratio of the number of the reproducing kinds in a dioecious population.

ANSWER: **sex ratio** [or **ratio** of **males** to **females**; prompt on "sex allocation"]

237-14-67-11102

3. Plutarch relates how the tyrant Alexander of Pherae once left a performance of this play in shame. One character in this play pounds her fists on the ground to make her dead children hear her sorrow. A character in this play is buried on his father's shield rather than a coffin, and his death is related by Talthybius. In its opening scene, the line "Once a city sinks into sad desolation the gods' state sickens also and their worship fades" is declaimed by Poseidon. One character in this play is convinced by another not to commit suicide for the sake of her son Astyanax, although Astyanax is soon thrown from the city walls. One of its title characters learns she will become the concubine of Neoptolemus. For 10 points, name this Euripides tragedy titled for figures like Cassandra, Andromache and Hecuba.

ANSWER: *The* **Trojan Women** [or **Troades**]

094-14-67-11103

4. A study of 34 subjects by Neil Naiman at the Ontario Institute for Studies in Education revealed six strategies of people effective at this task. Pit Corder promoted the analysis of systematic errors during this process to replace contrastive analysis. Stephen Krashen and Tracy Terrell argued that this process is fastest when affective filters are up and applied the Zone of Proximal Development to formulate the input hypothesis regarding it. Jerome Bruner argued that among children, social interaction with adults is key to this process. The possibility that success in this task is linked to age is the subject of the critical period hypothesis. This process is facilitated among children by the existence of an LAD according to Noam Chomsky's Universal Grammar hypothesis. For 10 points, name this task which involves internalizing a new grammar and vocabulary, hopefully resulting in fluency.

ANSWER: **learning a language** [accept equivalents such as **language acquisition**; accept **learning a second language**; prompt on "learning"]

237-14-67-11104

5. In 2008, one of this man's awful pieces of "shotgun art" was put up for auction on eBay. He played James "Hive" Maker in David Blair's *Wax or the Discovery of Television Among the Bees*. A 1983 documentary of this man by Howard Brookner opens with him reading two passages on *SNL* in 1981. This man collaborated on a failed invention called the Dreamachine with Brion Gysin and described his journey into the jungles of Colombia in his travelogue *The Yage Letters*. His best-known book was adapted into a 1991 David Cronenberg film; Nelson Muntz complained he "could think of at least two things wrong with" that film's title in "Bart on the Road". He killed his wife Joan Vollmer in a game of William Tell. For 10 points, name this author who wrote *Queer* and described Interzone in *Naked Lunch*.

ANSWER: William S. **Burroughs** [or William Seward **Burroughs** II or William **Lee**]

094-14-67-11105

6. Silvestre Revueltas depicts these objects in the dissonant 3/4 opening of *Música para Charlar*, adapted from the score of a film about them in Baja California. Ernst Krenek set data about these objects in Santa Fe to six-part polyphony inspired by a Josquin Desprez motet. Another piece depicting them has strings imitate snippets of recorded speech like "From Chicago" and begins with the movement "America - Before the War." An absurd tempo of 112 half-notes per minute is marked for a *perpetuum mobile* depicting one of them by Charles-Valentin Alkan. Heitor Villa-Lobos concluded *Bachianas Brasileiras No. 2* with a toccata depicting one "of the Caipira." Steve Reich used paradiddles to depict these vehicles in a string quartet titled for "different" ones. For 10 points each, name this kind of vehicle whose chugging is depicted in Arthur Honegger's *Pacific 231*.

ANSWER: **trains** [accept **railroad**s or **railway**s]

237-14-67-11106

7. A cautious man in this poem observes, "Last night, the moon had a golden ring, And to-night no moon we see!" In this poem, the observations "I hear the church-bells ring," "I hear the sound of guns" and "I see a gleaming light" each follow the exclamation "O father!" to begin three successive stanzas. This poem was inspired by the Great Blizzard of 1839, which destroyed the *Favorite* off Gloucester. It ends with the prayer "Christ save us all from a death like this, On the reef of Norman's Woe!" For 10 points, name this 1842 poem about a woman who is tied to a ship mast and dies in a storm after the title event befalls her father's ship, written by Henry Wadsworth Longfellow.

ANSWER: "The **Wreck of the Hesperus**"

019-14-67-11107

8. These constructs have solutions that are functions of at most three independent constants of motion by the strong form of Jeans theorem. The one of these named for Wigner is the quantum of the one named for Boltzmann. One definition of the H-function equates it to the integral of this quantity times its natural logarithm. One definition of this quantity equals the reciprocal of a normalization term times the exponential E over k times T . This value is constant along a phase trajectory by Liouville's theorem. The Boltzmann transport equation gives its time and spatial evolution. The most commonly accepted definition of the probability density function is as the derivative of this quantity. For 10 points, name this function which describes the allocation of particles across space.

ANSWER: **distribution function** [accept **cumulative distribution function**; prompt on "probability density function" before mentioned]

245-14-67-11108

9. This country's turmoil traces back to controversy over an executive decree that invoked the Law of Citizen Participation and asked for a controversial "fourth ballot box." This country was the subject of a controversial report overseen by Norma Gutierrez of the Congressional Law Library and commissioned by Aaron Shock. Patricia Rodas left this country for asylum in Mexico during events that led to the overthrow of Manuel Zelaya and the installation of Roberto Micheletti in a 2009 coup. In July 2014, the White House announced that refugee pre-screening stations are to be set up within this country, where many are trying to flee groups such as Barrio 18 and MS-13. For 10 points, name this Central American country at the center of the U.S. refugee crisis.

ANSWER: **Honduras**

019-14-67-11109

10. One group of these people ran into trouble following the bankruptcy of Antoine La Vallette. After a group of these people refused to move to the opposite bank of a river, the War of the Seven Reductions broke out. One member of this group named Edmund Campion was executed in 1581. These people were blamed for having had prior knowledge of an attack on a carriage making its way back to the tents of Ajuda; as a result of that Tavora Affair, where King Joseph I survived an assassination attempt, they were persecuted by the Marquis of Pombal. This group once controlled the Colonia in Uruguay. These people were expelled from Portugal in the late 1750s and their order was temporarily disbanded by Clement XIV in 1773. For 10 points, name these members of a religious order founded by Ignatius of Loyola.

ANSWER: **Jesuit** priests [or members of the **Society of Jesus**; accept first line buzzes French **Jesuits**; prompt on "Catholics" or "priests"]

094-14-67-11110

11. Like Hanukkah, this holiday features the addition of the Al-Ha-Nissim to the daily prayers. The charity obligatory on this day is known as "mattanot la-eyyonim." On this holiday, bizarre questions about Jewish law are asked in this holiday's namesake form of Torah. At the Seudat meal on this day, one is supposed to be unable to tell "arur" from "baruch." This holiday is when the "misloach manot" gift baskets are handed out, and this holiday in the month of Adar is when gragers are used to drown out the name of Haman. For 10 points, name this holiday where Jews get drunk and wear costumes to celebrate Esther and Mordechai's end to a Persian genocide plot.

ANSWER: **Purim**

019-14-67-11111

12. Corrádi and Szabó reformulated a problem about cube packing into this problem, leading others to demonstrate Keller's conjecture didn't hold for high dimensions. The best known approximation algorithm for this problem was formulated by Feige. Rossman analyzed the lower-bound for the k version of this problem on monotone circuits made from Erdos-Renyi random graphs. The parameters R, P and X are provided to a backtracking approximation algorithm for this problem improved by using a pivot vertex and named for Bron and Kerbosch. Adleman demonstrated how to solve this problem in linearly increasing time with DNA. A real world example of this problem is finding the max set of people in a social network who all know each other. For 10 points, name this NP-complete problem from graph theory of finding a graph's largest complete subgraph.

ANSWER: maximum **clique** problem [or maximal **clique** problem or **MCP**]

094-14-67-11112

13. At the turn of the century, this city was controlled by "boy boss" Billy Barnes, Jr. This city annexed "the Colonie" to its north and grew to house the nation's largest lumber district after Robert Fulton founded a steamboat company that reached this city. Abraham Lincoln compared strong wartime measures to drugs that heal the sick but hurt the healthy in a response to a critical letter written to him by a businessman from here who shares his name from its mayor from 1942 until 1983. This home of the two Erastus Corning was once known as Beverwyck and was the site of a meeting that proposed a new office of President General to be appointed by the King. Ben Franklin created his "Join or Die" cartoon for a Congress held in this city. For 10 points, name this capital of New York.

ANSWER: **Albany**

094-14-67-11113

14. On the shield of Achilles, the depiction of adolescents carrying off fruit from a vineyard is accompanied by one person making use of this object. A person who was known for great skill with this object gave a mysterious scary item to Pelops and built the first altar to Hermes. A person who was noted for using this object was borne to Teanarum by a dolphin after a greedy ship crew threw him overboard. This object was used by Amphion to construct the walls of Thebes. This object was used to kill Linus by Heracles, and by Apollo in a contest with Marsyas. The Siren who did not sing or play the flute played this instrument. For 10 points, name this musical instrument played in ancient Greece, which had seven strings.

ANSWER: **lyre**

019-14-67-11114

15. A Cincinnati bishop named Joseph Hartzell bought the entire exhibition of this man's paintings, which allowed him to move to France and win a medal from the Paris Salon for a version of *Resurrection of Lazarus* that innovatively emphasized Lazarus' response. He went to Palestine with J. Benjamin-Constant where he painted Jesus seated on a roof edge giving advice to Nicodemus. Mary sits on a bed with clasped hands and stares at a yellow light in his naturalistic *Annunciation*. In one of his best known paintings, a frying pan and a man's hat rest on the wooden floor as a grandfather instructs his barefooted grandson on how to play the title instrument. For 10 points, name this African American student of Thomas Eakins who painted *The Banjo Lesson*.

ANSWER: Henry Ossawa **Tanner**

094-14-67-11115

16. An elegy for another poet by this author repeats the line "They thought you would stop pursuing the white elephant." A poem by this author contains words like "sophisticreamy" and "salt-emptiness" and features a speaker who counts "the hour which will bring / my lost queen with angels' ash in the wind." This poet described a funeral procession as a "long black column of ants" in a poem that addresses "Anna at the knobs of the panel oblong." One of his poems describes how "the eagles" and "the robbers" "descend on us" and claims that "an old star departs, leaves us here on the shore." A collection by this author of "Lament of the Masks" and "Watermaid" opens with the lines "Before you, mother Idoto, naked I stand." For 10 points, name this author of *Heavensgate* and "Elegy for Alto," a Nigerian poet killed in the Biafran war.

ANSWER: Christopher Ifekandu **Okigbo**

252-14-67-11116

17. Joseph Raz has argued against the inclusive or "soft" version of this position because it misconstrues the nature of authority. One proponent of this position argued that this position's subjects have a core and a penumbra in order to dodge a critique launched by Lon L. Fuller. A book written to defend this position described the importance of a secondary "rule of recognition" that would serve as a test of validity. Ronald Dworkin attacked this position on the grounds that standards about obligations do not function as rules in "The Model of Rules." This position was first represented by John Austin's claim that law is a command backed by threat of force. For 10 points, name this perspective that holds that legal validity is a social fact that is separate from morality, notably defended in H. L. A. Hart's *The Concept of Law*.

ANSWER: **legal positivism**

237-14-67-11117

18. After visiting the U.S. Capitol, this man noted that missed attempts at the spittoon were damaging the carpet in both chambers. After visiting the Perkins Institution, this man wrote about seeing Samuel Gridley Howe's work with Laura Bridgman in a passage which inspired Helen Keller's parents to treat her. This man stayed at the Mermaid House while visiting Looking Glass Prairie, part of his journey to St. Louis by boat after his experience viewing slavery in Richmond, of which he wrote scathingly. This man's visit to the United States was chronicled in his *American Notes* and took place in 1842 as part of a tour to promote international copyrights. The year before he arrived in America, New Yorkers rioted at a dock importing his books, demanding to know if Little Nell lived. For 10 points, name this author whose disillusionment with America inspired his next book, *Martin Chuzzlewit*.

ANSWER: Charles **Dickens**

019-14-67-11118

19. Until 1939, control over these products was dominated by the Phoebus Cartel. An early use of these products was on the SS *Columbia*. A vacuum pump developed by Hermann Sprengel was a crucial step in the development of this invention. Due to its durability, cellulose replaced thread as a key component in Joseph Swan's version of this invention. By the 1920s, these devices were "frosted" with hydrofluoric acid before being sold to consumers. This invention was more practical than an earlier carbon-arc invention that had to be installed in series and had an open flame. A key improvement to these devices was the development of a tungsten component. For 10 points, name this invention, subject to hundreds of filament experiments by Thomas Edison.

ANSWER: incandescent **lightbulb** [or **incandescent lamp** or **incandescent light globe**]

094-14-67-11119

20. One of these people told Diocletian that he would become emperor after killing a boar. The Stanway board game was discovered in the grave of one of these people. Cicero befriended one of these people named Diviciacus while he was in Rome to petition the Senate. They placed a plant called samolus in drinking troughs and collected anguinum, magic stones which were apparently created by the spittle of entwined snakes. These people were the target of the Menai massacre, which destroyed their stronghold on the island of Mona. They are believed to have created the Coligny calendar and used the Ogham script. Julius Caesar claimed that these people believed in reincarnation and sacrificed criminals by burning them in wicker men. For 10 points, name these mistletoe-collecting priests of Celtic society.

ANSWER: **druids** [or **druidesses**; prompt on **Celts**; prompt on **Gauls**]

252-14-67-11120

21. A recent Tate Modern exhibit of this artist featured a jukebox playing Frankie Lymon tunes. Late period works by this artist include maps of the extent of Israel's occupation of the West Bank. A lithograph by this one-time commercial artist at EMI depicts a pair of dentures mounted on an electric toothbrush and is titled *The Critic Laughs*. This artist combined the figures of a woman and a car in his painting *Hommage a Chrysler Corp*. In his best known work, from the "This is Tomorrow" exhibition, a poster of a *Young Romance* comic hangs to the left of a woman wearing a lampshade on her head. For 10 points, name this British pop artist who included a muscle man holding a Tootsie Pop in his *Just what is it that makes today's homes so different, so appealing?*

ANSWER: Richard **Hamilton**

094-14-67-11121



1. Before this battle, an orator named Lycurgus made an oath to not rebuild any temples destroyed by the enemy. For 10 points each:

[10] Name this ancient battle that featured the heroics of the half-blind Aristodemus and the death of Mardonius.

ANSWER: Battle of **Plataea**

[10] Using the melted-down weapons of the Persians, the Greeks created this monument, sometimes called the Plataean tripod, as an offering to Apollo.

ANSWER: The **Serpentine Column** [or **Trikarenos Ophis**]

[10] The gigantic tent of Xerxes which was captured at Plataea may have been used as a skene [skee-nee] for these events. These events occurred during the City Dionysia and usually featured choruses.

ANSWER: **plays** [or **dramas**; or **comedies**; or **tragedies**]

252-14-67-11201

2. A poem in this collection by Ariwara no Narihira is noted for its use of the pillow word "chihayaburu" to connote ephemerality. For 10 points each:

[10] Name this anthology of a hundred Japanese *waka*, each by a different poet, collected by Fujiwara no Teika. The task of matching its lines is the basis of the card game *uta-garuta*.

ANSWER: *Ogura* ***Hyakunin Isshu***

[10] Many poems in the *Hyakunin Isshu* and other *waka* use cherry blossoms as a *kigo* to indicate this season, which is also found in the title of the first of Yukio Mishima's *Sea of Fertility* books.

ANSWER: **spring**

[10] Another anthology of one hundred Japanese poems was compiled by this San Francisco poet, a forerunner of the Beat poets. He wrote the collection *The Phoenix and the Tortoise* and seven poems about his wife Marthe.

ANSWER: Kenneth **Rexroth**

237-14-67-11202

3. The father of this technology was Roger Tomlinson, who used it to map land use and soils during the Canada Land Inventory. For 10 points each:

[10] Name this type of computer technology for storing, processing, and presenting spatial data.

ANSWER: **geographic information system** [or **GIS**]

[10] ArcGIS was developed by this largest vendor of geographic information systems software, founded by Jack and Laura Dangermond. It hosts an annual International User's Conference and developed the vector Shapefile format.

ANSWER: **Esri** [or **Environmental Systems Research Institute**]

[10] Along with LIDAR and aerial imaging, these kinds of maps were among the tools used to produce Digital Elevation Models, which facilitated the development of GIS. They represent elevation using contour lines.

ANSWER: **topographic** maps

237-14-67-11203

4. This character makes a bargain with Bertilak to give whatever he gets during the day for Bertilak's catch in the hunt, but he breaks his promise by failing to turn over Lady Bertilak's green girdle. For 10 points each:

[10] Name this knight from a Middle English poem who accepts a challenge to behead an oddly colored giant, if he is to be struck in turn the following year.

ANSWER: Sir **Gawain**

[10] The first line of *Sir Gawain and the Green Knight* refers to this event. Giovanni Boccaccio's *Il Filostrato* tells of two lovers during this event.

ANSWER: The **Trojan War** [accept The **Sack** of **Troy**, or The **Siege** of **Troy**, or other equivalents]

[10] In this poem by the author of *Sir Gawain and the Green Knight*, the title maiden allows the protagonist allows him to see the New Jerusalem. After he jumps in a river toward it, he returns out of his dream in the garden where he fell asleep.

ANSWER: "**Pearl**"

237-14-67-11204

5. This structure directs water inward for reasons of feng shui, and is found within Suntec City. For 10 points each:

[10] Name this largest fountain in the world.

ANSWER: the **Fountain of Wealth**

[10] Suntec City is found within this country, which Lee Kwan Yew developed into a prosperous authoritarian city-state centuries after it was founded by Stamford Raffles.

ANSWER: **Singapore**

[10] Suntec City is this kind of complex, as is one found in Edmonton that contains the Ice Palace and Galaxyland.

ANSWER: a shopping **mall**

019-14-67-11205

6. Minimal pairs are words that differ in only one of these units, the smallest linguistic units which can distinguish one word from another. For 10 points each:

[10] Name these basic units of speech which may be combined to form morphemes or larger units.

ANSWER: **phonemes**

[10] This Prague School linguist proposed that phonemes could be described in terms of features they do or do not possess in his distinctive features theory. He also defined six functions of language.

ANSWER: Roman Osipovich **Jakobson**

[10] This prominent model in phonology, proposed by Alan Prince and John Smolensky, argues that observed language comes from the application of universal constraints to a candidate set of outputs.

ANSWER: **Optimality Theory**

237-14-67-11206

7. This work was compiled from index cards, the last of which consisted only of unconnected words like "efface", "expunge" and "erase". For 10 points each:

[10] Identify this novel centering on the enormously fat neurologist Philip Wild, who doesn't love his younger, attractive wife, Flora. It was published in 2009 despite instructions by its author to destroy it after his death.

ANSWER: *The **Original of Laura*** [or ***Dying Is Fun*** or *The **Opposite of Laura***]

[10] *The Original of Laura* is an incomplete novel by this author of *Pale Fire*.

ANSWER: Vladimir (Vladimirovich) **Nabokov** [or Vladimir **Sirin**]

[10] It's a bit unclear the relationship between the real and fictional elements of Nabokov's relationship with this Swiss-French governess, who titles a short-story by the author likely originally written in French.

Nabokov re-used the story about this woman for a chapter in *Speak, Memory*.

ANSWER: "Mademoiselle **Q**"

094-14-67-11207

8. This artist declared that "a painting is nothing more than a flat surface with paint on it." For 10 points each:

[10] Identify this Minimalist American artist and flatness enthusiast who made stripe paintings like 1959's *Die Fahne Hoch!*

ANSWER: Frank (Philip) **Stella**

[10] In a section on flatness in his *Modern Painting*, this critic declared that "the illusion created by a Modernist is one into which one can look, can travel through, only with the eye." In his best known essay, from the *Partisan Review*, this Abstract Expressionist champion defined one of the two title concepts as "the debased and academized simulacra of genuine culture".

ANSWER: Clement **Greenberg**

[10] Stella's stripe paintings drew on the work of artists like Hans Hofmann and this artist of *Target with Plaster Cans* and numerous encaustic flags.

ANSWER: Jasper **Johns**

094-14-67-11208

9. This question follows "Who had a beauty too much more than human?," "Who ordered that Buridan be thrown in a sack into the Seine," and "Where are they, oh sovereign Virgin" in the first three stanzas of its poem. For 10 points each:

[10] Give this question which ends every verse of the "Ballad of the Ladies of Times Past."

ANSWER: "**Where are the snows of yesteryear?**" [or "**Mais où sont les neiges d'antan?**"]

[10] This medieval French scoundrel wrote the "Ballad of the Ladies of Times Past."

ANSWER: François **Villon**

[10] The "Ballad of the Ladies of Times Past" appears in this larger collection of octosyllabic verse, Villon's masterpiece, which contains almost all of his surviving poems.

ANSWER: Le (Grand) **Testament**

019-14-67-11209

10. This book was followed up by *The Grammar of Assent* and details the author's leadership of the Oxford Movement. For 10 points each:

[10] Name this book that was written in response to attacks by Charles Kingsley.

ANSWER: **Apologia** Pro Vita Sua

[10] The *Apologia* was written by this British guy who became a Roman Catholic cardinal after converting from Anglicanism. Along with Edward Pusey, he contributed to *Tracts For The Times*.

ANSWER: John Henry **Newman** [accept Cardinal **Newman**; accept Blessed John Henry **Newman**]

[10] This man is referred to as "the writer who made a deeper impression on my mind than any other" in the *Apologia*. This influential British preacher wrote *A Commentary on the Whole Bible* and *The Force of Truth*

ANSWER: Reverend Thomas **Scott**

250-14-67-11210

11. Kim Woo-jung fled the country after one of these companies collapsed in the 1990s. For 10 points each:

[10] Identify these large conglomerates that benefited from "guided capitalism". They include Daewoo and LG.

ANSWER: **chaebol** [or **jaebeol**]

[10] The chaebol are large companies in this country. The Seocho-gu district in its capital is home to Samsung Town.

ANSWER: **South Korea** [or **Republic of Korea**]

[10] Samsung's South Korean headquarters contains a reproduction of a room from this European city where Lee Kun-Hee gave a legendary talk outlining his plans to transform the company. This city is home to the world's largest book fair, the impressive Stadel art museum, and Goethe University.

ANSWER: **Frankfurt** am Main

094-14-67-11211

12. Artist Eleuterio Pagliano painted a contingent of Austrians retreating at a cemetery in this battle. For 10 points each:

[10] Identify this June 24, 1859 battle whose carnage inspired Henri Durant to found the Red Cross.

ANSWER: Battle of **Solferino**

[10] Pagliano's painting depicts a group of these French soldiers climbing over a wall at the Cemetery of Solferino. These mainly Berber troops wore baggy pants and exotic headgear, and a group of these troops fought against Russia in the January Uprising of 1863 in Poland under Colonel Rouchebrune.

ANSWER: **Zouaves**

[10] This temporary peace treaty was signed following the Battle of Solferino. In this agreement, Piedmont gained Lombardy from France and Austria maintained control over military fortresses in the Quadrilateral.

ANSWER: Peace of **Villafranca**

094-14-67-11212

13. David May collaborated with this man to create the occam programming language, and this scientist talked about his Elliott ALGOL compiler in his Turing lecture. For 10 points each:

[10] Identify this computer scientist. His namesake logic is used to define the correctness of a program, and he also invented Quicksort.

ANSWER: C. A. R. **Hoare** [or Tony **Hoare** or Sir Charles Antony Richard **Hoare**]

[10] Although randomizing the input can make Quicksort run in expected Big O of $n \log n$ time, its worst case is Big O of this quantity, also the worst case runtime for Selection Sort and Bubble Sort.

ANSWER: $O(n^2)$ [or Big O of **n squared**]

[10] Novosibirsk published a paper that combined Radix Sort and Quicksort on one of these machines used for parallel computing. Machines built on this paradigm have many serial processes all accessing a shared memory, and algorithms typically build on pointer jumping and can be put into categories like exclusive read exclusive write.

ANSWER: **PRAM** [or **Parallel Random-Access-Machine**]

094-14-67-11213

14. As part of his effort to get a "New Deal" for these animals, C. C. Little was able to secure Congressional funding for the National Cancer Institute. For 10 points each:

[10] Identify these creatures, made popular in research by the Jackson Laboratory, an institute who today houses an extensive genomic database of these animals.

ANSWER: **mice** [or **mouse**; do not accept "rats"]

[10] C. C. Little worked with W. E. Castle, who helped popularize this friar's work on the genetics of pea plants in the United States.

ANSWER: Gregor **Mendel**

[10] Working at Jackson Laboratory, Elizabeth Russell performed one of these procedures on anemic mice in order to cure them of their anemia. Georges Mathe was unsuccessful in curing some irradiated Hungarian nuclear workers with this technique in the 1950s, although the development of the drug cyclosporine increased this procedure's odds of success.

ANSWER: **bone marrow transplantation** [or **Hematopoietic stem cell transplantation** or **HSCT**]

094-14-67-11214

15. Henry Theurer developed the "float" kind of this technique by passing a vertical silicon rod through a heating coil and relying on surface tension to keep the molten phase in place. For 10 points each:

[10] Name this method invented by Bill Pfann to purify crystals by progressively heating them so that impurities concentrate in the molten phase.

ANSWER: **zone melting** [or **zone refining**; accept word forms; accept answers preceded by "float"]

[10] Zone melting and the Czochralski process are both methods often used to purify these materials, such as silicon and germanium. The introduction of impurities into these materials is called doping.

ANSWER: **semiconductors**

[10] Doping with acceptor impurities, such as boron and gallium in silicon, can be used to create this kind of semiconductor, which have more electron holes than electrons.

ANSWER: **p-type semiconductors**

237-14-67-11215

16. In "Specters of Marx," Jacques Derrida critiqued the eschatological tone of this concept as an anachronism, but the thinker who formulated this concept implied that it came about after the French Revolution. For 10 points each:

[10] Name this concept devised by Alexandre Kojève to denote a time when the regime of equal recognition could be taken for granted. Francis Fukuyama later appropriated it for his prediction of the ultimate triumph of liberal democracy.

ANSWER: the **end of history**

[10] The end of history is a concept derived from Kojève's reading of this philosopher, who described three successive spheres of right - abstract right, morality, and ethical life - in his *Elements of the Philosophy of Right*.

ANSWER: Georg Wilhelm Friedrich **Hegel**

[10] This Italian philosopher described the end of history as the condition of postmodernism in *The End of Modernity*. This student of Hans-Georg Gadamer advocates "weak thought," which eschews foundationalism for a multi-faceted approach to truth.

ANSWER: Gianni **Vattimo** [or Giantaresio **Vattimo**]

237-14-67-11216

17. Identify the following about Laura Z. Hobson, for 10 points each.

[10] Hobson is best known for writing this novel, where Phil Green discovers the latent anti-Semitism in the divorcee Kathy and other members of his friends and family after going undercover as a Jew. Green was played by Gregory Peck in the film version of this novel.

ANSWER: **Gentleman's Agreement**

[10] *Gentleman's Agreement* was made into an issue film by this director, who cast Robert DeNiro in his 1976 adaptation of *The Last Tycoon*. The protagonist of this director's best known film delivers a soliloquy on how his brother Charley ordered him to throw a match in Madison Square Garden in a scene filmed in the back of a cab.

ANSWER: Elia **Kazan** [or Elias **Kazantzoglou**]

[10] In 1971, Hobson published a five-thousand word critique of this show in the *New York Times* titled "As I Listened to Archie Say 'Hebe'..." This show was created by Norman Lear and spawned the spin-off *The Jeffersons*.

ANSWER: **All in the Family**

094-14-67-11217

18. Answer some questions about music in which phrases or procedures are repeated *ad nauseam*. For 10 points each:

[10] This Alvin Lucier tape piece involves recording a short monologue, then recording the recordings over and over. The resonant frequencies of the title location, which is "different from the one you are in now," dissolve the words into pure sounds.

ANSWER: **I am sitting in a room**

[10] This composer may or may not have instructed performers to repeat a tritone-heavy phrase 840 times in his *Vexations*. He also wrote the music for Jean Cocteau's *Parade* and coined the term "furniture music."

ANSWER: Erik Alfred Leslie **Satie**

[10] Maurice Ravel wrote this orchestral piece in which a snare drum ostinato accompanies a melody that gets passed around between instruments, including tenor and soprano saxophones, in a continuous crescendo.

ANSWER: **Boléro**

237-14-67-11218

19. This event began after two workers at the underground *Meildao* newspaper were arrested. For 10 points each:

[10] Identify this December 1979 incident where the namesake eight, including Annette Lu and Lin Yi-hsiung, were arrested for sedition after protests on Human Rights Day.

ANSWER: **Kaohsiung** Incident

[10] The Kaohsiung Incident was an early attempt to democratize this country, long ruled by the KMT.

ANSWER: **Taiwan** [or **Republic of China**]

[10] This future president of Taiwan was one of the Kaohsiung Eight. His election in 2000 marked the first time in post-war Taiwanese history that a party other than the KMT held the presidency.

ANSWER: **Chen** Shui-bian [or **A-Bian**]

094-14-67-11219

20. In 1978, Dennis Kucinich survived one of these actions by a margin of only 300 votes. For 10 points each:

[10] Identify this political action which was successfully carried out against California governor Gray Davis in 2003.

ANSWER: **recall** election

[10] Arthur Cyprian Harper, the mayor of this city, resigned after a recall campaign against him in 1909. Tom Bradley was the first African-American mayor of this city.

ANSWER: **Los Angeles**

[10] Before Gray Davis, the last governor to be recalled was Lynn Frazier, who was kicked out of office in this state. Native Americans in this state sued the federal government after the construction of Garrison Dam destroyed their farmlands.

ANSWER: **North Dakota**

094-14-67-11220

21. The narrator of this story declares, "A man sometimes devotes his life to a desire which he is not sure will ever be fulfilled. Those who laugh at this folly are, after all, no more than mere spectators of life." For 10 points each:

[10] Identify this short story centering on Goi, a low-ranking official who desires to consume a larger share of the title substance.

ANSWER: "**Yam Gruel**" [or "**Imogayu**"]

[10] "Yam Gruel" is a story by this author of "Hell Screen" and "In a Grove".

ANSWER: Ryunosuke **Akutagawa** [accept in either order]

[10] Akutagawa drew his inspiration for this protagonist of "Hell Screen" from a painter of the same name from the third scroll of the *Uji Shui*. This man watches his daughter Yuzuki burn to death in the carriage he uses as inspiration to paint the title object.

ANSWER: **Yoshihide**

094-14-67-11221