



1. This quantity divides the product of Boltzmann's constant and a term for temperature on one side of the general form of the Eyring equation. The square of elementary charge times c times the magnetic constant, all divided by two times this quantity yields the fine structure constant. A reduced form of this quantity divides it by two pi and is named for Dirac. Dividing this quantity by linear momentum yields a particle's de Broglie wavelength, and the energy of a photon is equal to this constant times frequency. For 10 points, identify this constant which is equal to about 6.626 times 10 to the power of negative 34 Joule-seconds.

ANSWER: **Planck's** constant [prompt on **h**]

189-13-83-01101

2. At the age of 73, Simon Bolivar Buckner ran as an unsuccessful third-party vice presidential challenger in this election, running on a ticket with another Civil War general, John M. Palmer. The losing vice presidential candidate in this election was a Swedenborgian named Arthur Sewall. This realigning election began the Fourth Party System. One campaign in this year printed handbills warning that a dollar would be worth fifty-three cents if the other side won. Mark Hanna managed the "front porch campaign" for the winning side of this election, in which the Democratic candidate proclaimed that he would not be crucified on a cross of gold. For 10 points, name this election which William McKinley won over William Jennings Bryan.

ANSWER: Election of **1896**

190-13-83-01102

3. The 410 kilometer seismic discontinuity in the mantle results from this mineral's transformation to spinel. This mineral occurs as a solid solution of forsterite and fayalite. According to Goldich's stability series, this mineral and the calcium plagioclase anorthite are most easily weathered. 500 Celsius is the boundary temperature for a reversible reaction in which this mineral and water combine to yield serpentine. Ultramafic rocks like peridotite consist of pyroxene and this mineral. This mineral consists of silica tetrahedra linked by magnesium or iron cations. For 10 points, name this mineral at the top of the discontinuous branch of Bowen's reaction series.

ANSWER: **olivine**

066-13-83-01103

4. A central character in this play first enters mocking the cheap flowers she has just seen. This play ends with another character exclaiming, "We are beautiful, joyous, drunk, and free!" The protagonists of this play discuss how the lower classes are filth incapable of love, and one of them is insulted for her affair with the milkman. One of the protagonists forged a letter that sent Monsieur to prison, and they take turns impersonating their employer in an unrealistically harsh manner. At this play's conclusion, the poisoned tea prepared for Madame is taken from Solange by Claire. For 10 points, name this play about two female servants written by Jean Genet.

ANSWER: *The* **Maids** [or *Les* **Bonnes**]

014-13-83-01104

5. In the parable of the Faithful Servant, Jesus tells his disciples to be like servants awaiting the return of their master from one of these events. In Matthew, Jesus compares the Kingdom of Heaven to a king whose servants are killed when they invite men to one of these events, and a man is ejected from this event with “weeping and grinding of teeth” for not wearing the proper garments. In another parable, Jesus tells of five foolish virgins who were prevented from attending one of these events after leaving to get oil. At one of these events, Jesus tells his mother “my hour has not yet come” and performs his first miracle in the Gospel of John when he turns water into wine. For 10 points, name these events, one of which occurred at Cana.

ANSWER: **weddings** [or **marriages**; or **marriage feasts**; or obvious equivalents; prompt on things like “feast” or “banquet” or “party”]

121-13-83-01105

6. A motif from the unrealized mural *The Watering Place* was the source for one painting in this group, in which a nude boy holds imaginary reins on a white animal next to him. A woman with a straw hat sits next to a jug while five coworkers look on in another painting from this group. This group of paintings was inspired by the artist's new relationship with Fernande Olivier. Two bouquets rest on the subject's shoulders in the most expensive of them, *Boy with a Pipe*. This group of paintings includes *Boy Leading a Horse* and *Family of Saltimbanques*, one of many depictions of circus performers. For 10 points, name these Picasso paintings that used bright and happy colors, in contrast with those from his Blue Period.

ANSWER: Picasso's **Rose** Period paintings [accept Picasso's **Circus** Period paintings before it is mentioned; prompt on **Picasso paintings** and similar answers]

192-13-83-01106

7. In this novel, a man who calls himself the "good guy" punishes a knife-wielding thief by forcing him to strip all his clothes off and leaving him to die in the wild. The protagonists of this novel are briefly joined by a sick old man named Ely who proclaims that there is no God, but all humans are his prophets. The protagonists of this novel own binoculars, a pistol with two bullets, a blanket, and some tools that they carry in a grocery cart. This novel follows an unnamed father and his son on a quest to reach the sea who pass through a hellscape destroyed by an unspecified disaster. For 10 points, name this post-apocalyptic novel by Cormac McCarthy.

ANSWER: *The **Road***

080-13-83-01107

8. In one movie set in this city, a man becomes upset when he sees his son glance at a rich pompadoured boy during a meal and is stopped by an angry crowd from committing a crime outside a soccer stadium here. A reporter fails to get phone numbers from women sunbathing on roofs in this city while following a helicopter carrying a statue of Jesus. Giorgio and the priest Pellegrini are tortured and executed by Nazis in a Roberto Rossellini film, which calls it an “open city.” William Wyler directed a film where Princess Ann meets the reporter Joe Bradley while exploring this city incognito. For 10 points, name this setting for *The Bicycle Thieves* and *La Dolce Vita*, the site of a "Holiday" taken by Gregory Peck and Audrey Hepburn.

ANSWER: **Rome**, Italy [or **Roma**, Italia]

121-13-83-01108

9. A leader in this conflict was Oenomaus, who was killed in early fighting. According to one account, a leader of one side forced captives to fight to the death in revenge for the death of Crixus. The eventual losing side in this conflict used ropes and ladders to rappel down cliffs to crush Gaius Claudius Glaber's army. This conflict was ended when insurgents, many of whom had been trained at Batiatus' school, were defeated at the Battle of the Siler River. Afterwards, participants were crucified along the Appian Way, and Crassus was furious that Pompey claimed credit for ending this conflict. For 10 points, name this unsuccessful slave rebellion against the Roman Republic led by a notorious ex-gladiator.

ANSWER: **Spartacus' revolt** [or **Third Servile** War; accept **Gladiator** War until "gladiator" is read]

052-13-83-01109

10. This island contains a cattle ranch named for John Palmer Parker. It contains the Hilina Slump, a chunk of land gradually sliding into the ocean, and the Great Crack, a fissure in the Kau district. This island celebrates the "Merrie Monarch Festival" and is home to a corporation that is one of the world's top producers of macadamia nuts. It has a center named for deceased NASA astronaut Ellison Onizuka. A district on this island is the namesake of a specialty coffee and is called Kona. Its highest point is the dormant volcano Mauna Kea. For 10 points, name this island, also known as the "Big Island."

ANSWER: **Hawaii** [or the **Big Island** until it is read]

052-13-83-01110

11. These pieces should be used to guide or threaten passed pawns in the endgame according to Tarrasch's Rule. In the Lucena position, the only pieces on the board are kings, pawns, and this piece. Losing this piece and only winning a minor piece is called "losing the exchange." The name of this piece derives from the Persian word for "chariot." Though it is not the queen, it is possible to force checkmate with only this piece and a king. For 10 points, name these chess pieces that can move along their rank and file and that are shaped like castles.

ANSWER: **rooks** [or **castles** until is is read]

080-13-83-01111

12. Along with Adnan Khashoggi, this person was acquitted of racketeering charges in a 1990 trial. In 1972, Carlito Dimahilig tried to stab this person with a bolo knife in a possibly staged scene. This still-living politician claimed her family's riches came from the war loot of General Yamashita. This woman, a member of the Kilusang Bagong Lipunan party, finished ninth in the 1998 presidential election, but threw her support behind winner Joseph Estrada. Known as the "Steel Butterfly," this woman fled the country after the People Power Revolution. She infamously owned over a thousand pairs of shoes. For 10 points, name this former first lady of the Philippines, the wife of politician Ferdinand.

ANSWER: **Imelda Marcos** [or Imelda Remedios Visitacion **Romualdez**; prompt on **Marcos**]

052-13-83-01112

13. An extinct order in this phylum has a horn-shaped chamber with a wrinkled wall and was called rugosa. One of the largest invertebrates in the world, praya dubia, is within this phylum, which contains such complex colony organisms as siphonophores. Some of its classes include cubozoa, the relatively immobile anthozoa, and scyphozoa. One organism in this phylum causes Irukandji syndrome in humans and another similar one has killed over 60 people in Australia. Bodies of organisms in this phylum consist of mesoglea, and they also possess specialized explosive cells used for prey capture by releasing a toxin. For 10 points, name this phylum which includes organisms like sea anemones and jellyfish.

ANSWER: **Cnidaria** [or **coelenterata**]

052-13-83-01113

14. In one poem, this poet described how "this air I gather and release" was lived on by a man who "fired France for Mary without spot." This poet claimed that "after-comers cannot guess the beauty been" in a poem about the felling of his "aspens dear." This poet of "Duns Scotus's Oxford" and "Binsey Poplars" asked, "Why do men then now not reck his rod?" in a poem whose subject "will flame out, like shining from shook foil." Another of his poems describes "fresh-firecoal chestnut-falls" and "rose-moles all in stipple upon trout that swim" and begins, "Glory be to God for dappled things." For 10 points, name this British poet, a proponent of sprung rhythm who wrote "Pied Beauty" and "God's Grandeur."

ANSWER: Gerard Manley **Hopkins**

192-13-83-01114

15. The person targeted in this event was traveling along the Catherine Canal when it occurred. The perpetrators of this action became known as "those of the first of March." A failed attempt to do this same action was commemorated with a planned gate design by Viktor Hartmann. The Church of the Savior on Blood was built where this event took place. The initial attack in this event failed partially due to a bulletproof vehicle supplied by Napoleon III. It required a bomb thrown by Ignaty Grinevitsky. This event prevented a ruler from releasing his plan to create a Duma. For 10 points, name this 1881 event carried out by a group called the People's Will, in which the Russian monarch who emancipated the serfs died.

ANSWER: **assassination of Alexander II** [accept synonyms for "assassination" such as **killing**; prompt on **Alexander**]

052-13-83-01115

16. In one scene in this novel, a character accuses a man of stealing scissors and a knife-grinder as part of "a wild rush of need to destroy everything between them." Earlier in this novel, a woman is criticized for placing grass bundles in front of her house. Another character drowns newborn kittens in a bucket of water and remembers seeing a photograph of Lydia carrying school books on her head. The protagonists in this novel drive a yellow truck called a "bakkie," and it ends with a woman running towards a mysterious helicopter. It begins with Maureen and Bamford having fled Johannesburg to reach a native village. For 10 points, name this novel by Nadine Gordimer whose title character is the black servant of the Smales family.

ANSWER: **July's People**

052-13-83-01116

17. On his way to accomplish this task, a man was captured and almost sacrificed by the Egyptian King Busiris. The man who accomplished it, who was not Menelaus, obtained information by capturing the Old Man of the Sea. On his way to do this, that man ran into a son of Poseidon who was amazingly strong if he remained in contact with the ground. This task was assigned after Eurystheus claimed slaying the Hydra and cleaning the Augean stables did not count. It may have involved the slaying of the dragon Ladon, but it also involved one man offering to hold up the heavens for a bit to convince Atlas to help him. For 10 points, name this eleventh of Heracles' labors, which involved him stealing immortality-granting fruit.

ANSWER: stealing the **golden apples** of the Hesperides

052-13-83-01117

18. This character leaves a DJ's fur-decorated apartment after her friend's breasts slip out of her dress while she hangs by her teeth from his ear. After returning home, she is horrified to see her neighbor Dodo Conway pregnant with a seventh child. This character is taken to the emergency room for the immense bleeding she experiences after her first sexual experience with the Harvard professor, Irwin. She takes on the name "Elly Higginbottom" while going out with her sexy friend Doreen, with whom she works at *Ladies' Day*. While interning at a magazine over the summer, she suffers a breakdown and undergoes electroshock therapy. For 10 points, name this protagonist of Sylvia Plath's *The Bell Jar*.

ANSWER: Esther **Greenwood** [or **Esther** Greenwood]

080-13-83-01118

19. For a ring, this value is the number of times you have to add the multiplicative identity to get the additive identity. It's not "minimal," but this adjective describes an object that is the product of all invariant factors of a Jordan normal form. This term also denotes a type of curve along which a partial differential equation becomes an ordinary differential equation and is solvable. The Cayley-Hamilton theorem concerns solutions to a polynomial described by this adjective, which has zeroes at the eigenvalues of an associated matrix. This word also denotes a quantity computed by the formula vertices minus edges plus faces. For 10 points, give this mathematical term that denotes a quantity that is two for any convex polyhedron and is named for Euler.

ANSWER: **characteristic** [or **characteristic** polynomial; or Euler **characteristic**; or **characteristic** curve]

080-13-83-01119

20. This composer memorably used false relation in the final cadence of the piece "O Nata lux." One of this composer's works culminates with forty people singing "respite humilitatem nostram." This composer of two sets of *Lamentations* set eight psalms and the *Veni Creator* in one his collections, in which he used the Phrygian mode for the piece "Why Fum'th in Fight." This man and his student William Byrd were given a 21-year monopoly on the production of polyphonic music. He wrote a motet for eight different choirs for Queen Elizabeth I's fortieth birthday. For 10 points, name this Renaissance English composer of *Spem in alium*, who wrote a theme on which Ralph Vaughan Williams composed a fantasia.

ANSWER: Thomas **Tallis**

190-13-83-01120

21. One procedure used to treat this condition has been the subject of hundreds of publications by Harold Sackeim; that procedure was developed by Cerletti and Bini. Imipramine, which goes by the trade name Tofranil, is part of the tricyclic class of compounds used to treat this condition. Paroxetine and fluoxetine are compounds which are used to treat this condition, and selegiline is an example of a monoamine oxidase inhibitor used to treat this condition. Dysthymia is a milder long-term form of this condition. For 10 points, identify this condition which is sometimes treated using electroconvulsive therapy or selective serotonin reuptake inhibitors such as Prozac.

ANSWER: clinical **depression** [or **major depressive disorder**]

189-13-83-01121

22. This man names a principle giving the symmetry groups of a crystal under an external influence, his "dissymmetry principle." A constant named for this physicist equals permeability squared times N times the g-factor squared times J times quantity J plus one, all over quantity three times Boltzmann's constant, where J is the total angular momentum quantum number. That constant appears in an empirical law named for him which sets magnetization proportional to magnetic field over temperature and in a formula giving the susceptibility at a given temperature; the latter is a law he names with Weiss. He and his older brother Jacques discovered piezoelectricity. The temperature above which ferromagnetism no longer exists is named for him. For 10 points, name this man who won a Nobel with his wife Marie.

ANSWER: **Pierre Curie** [prompt on "Curie"]

190-13-83-01122

23. This politician's Environment Minister revealed that this man wore a hearing aid to cover up his slight deafness. He said the only food worse than British food is Finnish when complaining about the Olympics, and he described British policies as part of "Anglo-Saxon ultraliberalism." This man's chosen Prime Minister was accused of investigating his rivals in the Clearstream Affair. He served as Prime Minister from 1986 to 1988 during the "cohabitation" period with Francois Mitterrand. This man won his second term as president by defeating far right politician Jean-Marie Le Pen. For 10 points, name this President of France from 1995 to 2007 who was succeeded by Nicolas Sarkozy.

ANSWER: Jacques Rene **Chirac**

052-13-83-01123



1. Artemisia ran into one of her allies during this battle as she escaped from it, but Xerxes mistook it for a brave attack on the Greeks. For 10 points each:

[10] Identify this 480 BCE naval battle that was a decisive Greek victory.

ANSWER: Battle of **Salamis**

[10] This Athenian rival of Themistocles known as "the Just" captured the island of Psyttaleia during the Battle of Salamis. Earlier, this man had vigorously opposed Themistocles' fleet-building policies.

ANSWER: **Aristides**

[10] Themistocles interpreted the Delphic oracle's prophecy that only this kind of structure would save Athens into an argument for his fleet building.

ANSWER: **wooden walls** [or **wall of wood**]

126-13-83-01201

2. This character is last seen complaining that he has "lost a whole day over these people." For 10 points each:

[10] Identify this character who is first seen complaining about the lack of good French comedies and mocking *Mixing It Up* before he is confronted by a father, mother, step-daughter, son, and child.

ANSWER: the **director** in *Six Characters in Search of an Author* [or the stage **manager**]

[10] The director appears in this absurdist Italian author's play *Six Characters in Search of an Author*.

ANSWER: Luigi **Pirandello**

[10] This other Pirandello character starts a new life after erroneously being declared dead. He eventually abandons that identity by faking his death, only to be unable to return to his old life.

ANSWER: **Mattia** Pascal [or Mattia **Pascal**]

052-13-83-01202

3. This institution is first outlined in the *Kitab-i-Aqbas*. For 10 points each:

[10] Name this governing institution that was established after the Ten Year Crusade. Its seat is found in Haifa, Israel.

ANSWER: **Universal House of Justice**

[10] The Universal House of Justice decides doctrines within this faith, founded by Baha'u'llah.

ANSWER: **Baha'i**

[10] The Ten Year Crusade was launched by this man, who led Baha'i between 1921 and 1957. He was given the title "Guardian" and translated many foundational Baha'i texts into English.

ANSWER: **Shoghi Effendi** Rabbani [prompt on partial answer]

192-13-83-01203

4. This character is the landlord of tenant farmer Phil Hogan in the play *A Moon for the Misbegotten*. For 10 points each:

[10] Name this character, an alcoholic actor like his father. His mother Mary is addicted to morphine, and his brother Edmund has tuberculosis.

ANSWER: **Jamie** Tyrone [or **James** Tyrone Jr.; prompt on **Tyrone**; do not accept “James Tyrone Sr.”]

[10] Jamie Tyrone appears in the play *Long Day’s Journey into Night*, written by this author of *The Iceman Cometh*.

ANSWER: Eugene **O’Neill**

[10] O’Neill occasionally used uncommon theatrical effects in his plays. Characters wear masks in *The Great God Brown*, while *Strange Interlude* frequently features characters engaging in this action.

ANSWER: **talking to the audience** [or **breaking the fourth wall**; prompt on **soliloquy**]

052-13-83-01204

5. This paper was rejected by four publications, including the *American Economic Review*. For 10 points each:

[10] Name this 1970 paper by George Akerlof which discusses information asymmetry in which the seller knows more about a product than the buyer. Its title references a defective car.

ANSWER: “The **Market for Lemons**: Quality Uncertainty and the Market Mechanism”

[10] The paper suggests that markets in which there is asymmetric information show characteristics similar to those described by Gresham’s Law. In its basic form, that law says bad types of this item drive out good forms.

ANSWER: **money** [accept synonyms]

[10] Years before Gresham was born, this man wrote a 1526 paper on the request of Sigismund I. This man's paper “On the Minting of Coin” described the principle of “bad money driving out good.”

ANSWER: Nicolaus **Copernicus**

052-13-83-01205

6. Answer the following about the so-called "Great Compromise of 1787," for 10 points each.

[10] The compromise reacted to Edmund Randolph's plan in which the legislature memberships would be allocated to each state based on their population size. Randolph hailed from this state, also the home of Thomas Jefferson.

ANSWER: Commonwealth of **Virginia**

[10] The compromise of a bicameral legislature with different allocations of membership was proposed by Oliver Ellsworth and Roger Sherman, both of whom were from this state.

ANSWER: **Connecticut**

[10] Sherman later proposed the Three Fifths Compromise regarding slaves in conjunction with this man, a Scottish-born Pennsylvanian politician who also served as one of the first Supreme Court justices.

ANSWER: James **Wilson**

052-13-83-01206

7. Name some dangers involved in working in a chemical lab, for 10 points each:

[10] When using chemicals that can evolve dangerous gases, its common to perform any work in one of these units, which contains a negative-pressure ventilator and a moveable glass sash.

ANSWER: fume **hood**

[10] Extra care should be taken when working with certain functional groups, such as this one, which is symbolized NO₂ and is found in explosives such as TNT.

ANSWER: **nitro**

[10] When boiling a liquid, a boiling stick may sometimes be used to prevent this event, in which a large gas bubble forms and pushes liquid out of the container.

ANSWER: **bumping**

140-13-83-01207

8. This city was about 40 miles from the Flossenbuerg concentration camp. For 10 points each:

[10] Name this German city home to a series of postwar trials of Nazi war criminals, including proceedings that sentenced Hermann Goering and Joachim von Ribbentrop to death.

ANSWER: **Nuremberg** [or **Nuernberg**]

[10] This Minister of Armaments and architect used a brilliant defense strategy to only wrangle a 20 year sentence. He later wrote the book *Inside the Third Reich*.

ANSWER: Albert **Speer** [or Berthold Konrad Hermann Albert **Speer**]

[10] This man was executed at Nuremberg and had previously served as the Commissioner of the occupied Netherlands during the war. He also served as chancellor of Austria during the Anschluss.

ANSWER: Arthur **Seyss-Inquart**

052-13-83-01208

9. One character in this novel is a café owner named Tarzan. For 10 points each:

[10] Name this novel about Said Mahran, the title criminal recently released from jail in Cairo. While seeking vengeance on his betrayers, he meets Rauf Ilwan, a former revolutionary leader who has abandoned his principles.

ANSWER: *The **Thief and the Dogs*** [or ***El-Lis wa el-Kilab***]

[10] *The Thief and the Dogs* is a novel by this Egyptian author of the *Cairo Trilogy*.

ANSWER: Naguib **Mahfouz**

[10] This Mahfouz novel takes place at the title boarding house. Various characters represent Egyptian political philosophies and most are entranced with the servant girl Zohra.

ANSWER: **Miramar**

052-13-83-01209

10. Answer the following on Venetian painting, for 10 points each.

[10] This Venetian painter created the *Pesaro Madonna* for the Frari Basilica. He painted a small dog on a bed with a reclining nude in his *Venus of Urbino*.

ANSWER: **Titian** [or Tiziano **Vecellio**]

[10] Titian finished the *Feast of the Gods* created by his teacher Giovanni, who belonged to this Venetian artistic family. Its patriarch Jacopo studied with Gentile da Fabriano.

ANSWER: **Bellini**

[10] Venetian artist Lorenzo Lotto names a type of these artistic items of non-European origin that he was fond of depicting. Hans Holbein the Younger used ones with lozenge and octagonal designs in many of his portraits.

ANSWER: Oriental **rugs** [or an Oriental **carpet**]

189-13-83-01210

11. Medical terms related to this organ often begin with the prefix “pulmo-.” For 10 points each:

[10] Name this organ which in mammals contains alveoli where the exchange of carbon dioxide and oxygen takes place.

ANSWER: the **lung**

[10] One lung disease, chronic bronchitis, is characterized by an increased number and size of this type of epithelial cells which secrete mucin.

ANSWER: **goblet** cells

[10] This specific term for breathlessness or air hunger is frequently used in discussing lung diseases, such as asthma. It is measured in five grades on the mMRC Breathlessness Scale.

ANSWER: **dyspnea**

052-13-83-01211

12. This goddess got into an argument with her brother Susanoo, which eventually led to him throwing a flayed horse at her and causing her to hide in a cave. For 10 points each:

[10] Name the Shinto goddess of the sun, who eventually emerged from the cave after Uzume danced and stripped on top of a bathtub.

ANSWER: **Amaterasu**-omikami [or **Ohirume-no-muchi**-no-kami; or **Heaven-Shining-Great-August** Deity]

[10] In a more heroic moment, Susano'o killed this eight-headed monster, which he defeated by getting it drunk on sake and decapitating each head using the sword Kusanagi.

ANSWER: Yamata-no-**Orochi**

[10] This kami was the only one to not swear loyalty to Amaterasu's grandson Ninigi when Ninigi descended from heaven, but later changed his mind when visited by Uzume, whom he later marries.

ANSWER: **Sarutahiko** Okami

140-13-83-01212

13. This body of water lies below the Arafura Sea. For 10 points each:

[10] Name this gulf which lies between the Cape York Peninsula and Arnhem Land, the latter of which is part of the Northern Territory.

ANSWER: Gulf of **Carpentaria**

[10] The Gulf of Carpentaria juts into this country, whose states include New South Wales and Victoria.

ANSWER: Commonwealth of **Australia**

[10] East of the Gulf of Carpentaria is Queensland, whose capital is this city. This city's namesake river flows into Moreton Bay.

ANSWER: **Brisbane**

192-13-83-01213

14. This character and his love burst into tears after a recitation of “Ossian.” For 10 points each:

[10] Name this man who falls in love with Albert's fiancée Lotte while living in Wahlheim.

ANSWER: Young **Werther**

[10] *The Sorrows of Young Werther* is an epistolary novel written by this German polymath and friend of Friedrich Schiller.

ANSWER: Johann Wolfgang von **Goethe**

[10] This poem, one of Goethe's most famous, was written in his old age upon his separation from Ulrike von Levetzow. In it, Goethe commands his companions to abandon him by the rocks and begins by asking, "What should I hope now from the reunion, from this day's still-closed blossom?"

ANSWER: the "**Marienbad Elegy**" [or die "**Marienbader Elegie**"; or "**Elegie**"]

052-13-83-01214

15. During this event, Nino Bixio put down a series of revolts. For 10 points each:

[10] Name this 1860 event in which a volunteer corps landed in Sicily in order to defeat Bourbon forces. It brought Naples and Sicily into the Kingdom of Sardinia and was a major event in the Italian Risorgimento.

ANSWER: **Expedition of the Thousand** [or **Spedizione dei Mille**]

[10] The Expedition of the Thousand was led by this "Hero of Two Worlds." His volunteer force was known as the Red Shirts and he previously had fought in the Uruguayan Civil War.

ANSWER: Giuseppe **Garibaldi**

[10] This October 1860 battle, fought near the namesake river, was the largest fought in the expedition. While not a decisive victory for Garibaldi, it forced Sicilian king Francis II to flee, and later that month, Sardinia annexed the Two Sicilies.

ANSWER: Battle of **Volturnus** [or Battle of the **Volturno** River]

052-13-83-01215

16. An urban legend states that this structure has 666 panes. For 10 points each:

[10] Name this glass and metal I.M. Pei-designed structure within the Cour Napoleon, criticized by some for its stark contrast with the art museum which it serves as the entrance to.

ANSWER: **Louvre Pyramid** [accept descriptive answers like the glass **pyramid in front of the Louvre**]

[10] In the 1960s, I.M. Pei drew up plans to redesign the business districts of this American city. This city's residents argued against the project, criticizing its destruction of the Criterion Theater, among other historic places.

ANSWER: **Oklahoma City**, Oklahoma

[10] Henry N. Cobb, a member of I.M. Pei's firm, designed this tallest skyscraper in Boston, whose premises notoriously have to be vacated during strong winds, lest passersby be crushed to death by falling windowpanes.

ANSWER: The John **Hancock** Tower [or **Hancock** Place; or The **Hancock**; bemusedly accept **Plywood Palace** and **Plywood Ranch**]

192-13-83-01216

17. The Dharasana Satyagraha occurred in the wake of this event, which ended at a beach in Dandi. For 10 points each:

[10] Name this campaign occurring during the governorship of Lord Irwin that was directed against a British tax on a certain commodity. It began near Ahmadabad and resulted in the arrest of 60,000 Indians.

ANSWER: **Salt March** [or **Salt Satyagraha**; prompt on **Dandi March**]

[10] Gandhi highly opposed untouchability, an issue also campaigned against by this Buddhist leader born into an untouchable caste. This father of the Scheduled Castes Federation was hailed by Amartya Sen as his "father" in economics.

ANSWER: Bhimrao Ramji **Ambedkar**

[10] The Mahatma long struggled with maintaining this condition for himself, an issue dealt with in a 2011 Jad Adams biography. One of the principal tenets of "brahmacharya," this condition was tested late in Gandhi's life by his grandniece Manubehn.

ANSWER: **celibacy** [or **chastity**; or anything that implies **not having sex**]

192-13-83-01217

18. This character served in the Second Anglo-Afghan War and was wounded at the Battle of Maiwand. For 10 points each:

[10] Name this former British Army surgeon who becomes engaged to governess Mary Morstan in *The Sign of the Four*. He discovers his old friend is still alive in "The Adventure of the Empty House."

ANSWER: Dr. **Watson** [or **John** Watson]

[10] Doctor Watson is the companion of this sleuth who investigates cases like *The Hound of the Baskervilles*.

ANSWER: Sherlock **Holmes** [or **Sherlock** Holmes]

[10] In "The Adventure of the Empty House," Holmes confronts this villain, the so-called "second most dangerous man in England," a former lieutenant of Professor Moriarty.

ANSWER: Colonel Sebastian **Moran** [or **Sebastian** Moran]

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19. It's time to look at musical death, for 10 points each.

[10] Which composer of the Jupiter Symphony and *The Magic Flute* died at age 35, although there is little evidence to suggest he was poisoned by Antonio Salieri?

ANSWER: Wolfgang Amadeus **Mozart**

[10] An oft-repeated story suggests Mozart dictated passages of his famous *Requiem* to this pupil of his, who completed it. This man would die himself at a young age due to tuberculosis.

ANSWER: Franz Xaver **Sussmayr**

[10] This upstart French composer wrote an oft-performed "Poeme" and died a very painful death when he collided with a brick wall while biking downhill.

ANSWER: Amedee Ernest **Chausson**

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20. Like a similar operation, the result of this operation can be proven to vanish at inputs of infinity using the Riemann-Lebesgue lemma. For 10 points each:

[10] Identify this operation which gives the power spectral density when applied to the autocorrelation.

ANSWER: **Fourier transform**

[10] The Fourier transform can be used to solve this hyperbolic PDE. This differential equation sets the second partial derivative of u with respect to time equal to a constant times the Laplacian of u .

ANSWER: **wave** equation

[10] A Fourier transform on this type of function is used to find the coefficients for its Fourier series. This kind of function can be decomposed into sines and cosines because, like those functions, it regularly repeats the same set of outputs.

ANSWER: **periodic** function

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21. For an incompressible fluid, this quantity is distributed equally in all directions. For 10 points each:

[10] Identify this quantity which is calculated as force over area.

ANSWER: **pressure** [prompt on **P**]

[10] With Ludwig Hagen, this scientist names an equation from fluid dynamics which sets the change in pressure proportional to length of pipe and volumetric flow rate, and inversely proportional to the fourth power of the radius of the pipe.

ANSWER: Jean Louis Marie **Poiseuille**

[10] This kind of pressure, which causes drag force, is pressure exerted on a body moving through a fluid medium. It is calculated as density times the square of velocity and strips galaxies of interstellar gas.

ANSWER: **ram** pressure

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