

## ACF Regionals 2015: A Livable Community

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### Tossups

1. Chapter 8 of this text notes that all creation is "groaning" as in the pains of childbirth; later, it compares its addressees to a branch grafted into an olive root, who must offer their bodies as "living sacrifices." Augustine opened to this Biblical book after hearing the command "Tolle, lege," which turned him Christian. A commentary on this text, stressing the "wholly otherness of God," was written during World War I by Karl Barth. This text's third chapter states that all Jews and Gentiles alike have fallen short of the grace of God, and its sixth chapter says that "the wages of sin is death." Martin Luther used this epistle to support justification by faith alone. For 10 points, name this first and longest New Testament epistle, addressed by Paul to the Jews of an imperial capital.

ANSWER: Epistle to the Romans

2. This character is called "an Enemy in the shape of a Friend" in a letter which warns that "continual dropping will wear away a Stone—ay, more—a Diamond." This man appears giving a sermon in Evershead on Galatians following the death of his mother. This character hid in a vault at Kingsbere to surprise a woman whom he had earlier forced to eat a strawberry out of his hand while at his estate at Trantridge Cross. His blood drips through the ceiling of Mrs. Brooks, the landlady of The Herons, after he is killed by the woman who bore him a son named Sorrow. That killer, the daughter of John and Joan Durbeyfield, runs away to Stonehenge with Angel Clare. For 10 points, name this character who rapes Tess after she claims to be his cousin in a Thomas Hardy novel.

ANSWER: Alec D'Urberville [or Alexander D'Urberville; prompt on "D'Urberville" or "Stoke" before mention]

3. A New York building of this type includes an installation of eighteen massive boulders with trees growing out of them called the "Garden of Stones." Kevin Roche designed that building of this type, and expanded another New York building of this type that hosted the 1966 *Primary Structures* exhibition of minimalist art. Another building of this type includes a large staircase that unexpectedly leads up to a blank wall, and includes the "Fallen Leaves" artwork, in which cutout steel faces cover the floor of a "Memory Void." That zigzagging building of this type in Berlin was designed by Daniel Libeskind. For 10 points, name this type of building displaying the history and art of a people whose own architecture includes the Western Wall at the Temple Mount and many synagogues.

ANSWER: Jewish Museum [or Museum of Jewish Heritage; prompt on museums]

4. This author classified women as housewives, guardian angels, dancers, or witches in the essay "Daguerreotypes." This author wrote a marionette play in which Abraham plans to murder Jan Bravida until a witch puts a curse on his inn so that every lie told there will be revealed as truth the next morning. This author of "The Revenge of Truth" also wrote about Miss Nat-og-Dag, Countess Calypso, and Jonathan Maersk telling stories in a granary while taking shelter from a flood in "The Deluge at Norderney." In another book, this author described such people as Berkeley Cole, who drinks a bottle of champagne every morning, and Kinanjui, the leader of the laborers on her eventually-failed estate in the Ngong Hills of Kenya. For 10 points, name this author of *Seven Gothic Tales* and *Out of Africa*.

ANSWER: Isak Dinesen [or Karen Blixen]

5. A journey down this river is the subject of *Between the Woods and the Water* by Patrick Leigh Fermor. Before flooding due to a hydroelectric project, this river's small island of Ada Kaleh was home to a large Turkish population. In 2000, tributaries of this river were affected by a huge cyanide spill from a gold mine near Baia Mare. This river is home to Europe's largest binational hydroelectric dam at the Iron Gate. A major canal links this river to the Main. The Regen flows into this river at Regensburg, and its other tributaries include the Sava and the Tisza. Before the construction of the Szechenyi Chain Bridge, this river divided the twin cities of Buda and Pest. For 10 points, name this river that flows past Belgrade and Vienna and empties into the Black Sea.

ANSWER: Danube River [or Donau]

6. A model of this phenomenon developed in Lund and Grenoble built on an earlier one that analogized its relation with position to a stress-strain curve and accounted for hysteresis in the case of permanent displacement. Described by the Dahl model, this behavior was shown by IBM in 2008 at a molecular level using an atomic force microscope on cobalt atoms cooled to 5K. This phenomenon causes head loss proportional to the flow velocity squared divided by the hydraulic diameter and multiplied by the pipe length as well as a value describing this phenomenon named for Darcy. The strength of this force is independent of contact area and sliding velocity according to laws named for Amontons and Coulomb. For 10 points, name this force whose maximum value is proportional to the normal force and which opposes motion.

ANSWER: friction

7. In this country, Nitistas supported a coup by a movement calling itself Fractionism. The CIA helped build a rebel headquarters at Jamba in this country, whose independence was fought for by Holden Roberto. A US legal proviso attempting to ban arms exports to this non-Nicaragua country was named for Iowa senator Dick Clark. After an electoral dispute in this country, Jeremias Chitunda was killed in the Halloween Massacre along with other politicians of the Ovimbundu ethnicity. The Benguela railway was damaged by a war in this country where, until the 2002 death of Jonas Savimbi, UNITA fought the MPLA with Cuban military backing. For 10 points, name this country where separatists hold the oil-rich Cabinda exclave, a former Portuguese colony on Africa's Atlantic coast.

ANSWER: Republic of Angola

8. A man of this surname got wealthy working with David Sarnoff to merge many film studios into Radio Keith-Orpheum, or RKO Pictures. While assistant to a government official of this surname, John Seigenthaler was hit with a pipe in Alabama. The St. Coletta School in Wisconsin hid a member of this family whose father had her lobotomized, then told her siblings to say she was always disabled. A man of this family quoted Aeschylus on "the awful grace of God" atop a flatbed truck after MLK's assassination. Sargent Shriver married into this family, whose patriarch Joseph married boss "Honey Fitz"'s daughter. For 10 points, what family's highest-ranking politician worked with Ted Sorenson on *Profiles in Courage* and made his brother Robert Attorney General in 1961?

ANSWER: Kennedy family [or Joseph Kennedy; or Rosemary Kennedy; or Robert Francis "Bobby" Kennedy; or John Fitzgerald "Jack" Kennedy]

9. This text suggests that five ways for a soul to do "violence to itself" include by becoming a "tumor on the universe." This text claims that a man must act as if he were a member of the "cosmopolis" to act justly. This book's author often tells himself "Erase impressions!" This book claims that a man should *be* upright, rather than be *kept* upright. This book opens with a list of lessons learned from family members and teachers, including Rusticus's gift of Epictetus's *Discourses*, which inspired this book's view of man as a "soul attached to a corpse". This work was written along the river Gran and at Carnuntum as the author led military campaigns along his border. For 10 points, name this set of 12 books of personal Stoic philosophical writing by Marcus Aurelius.

ANSWER: Meditations of Marcus Aurelius [or To Himself; or Ton eis heauton]

10. Agnes Martin's paintings are almost exclusively canvases of these objects scaled to 6' and filled with varying grids. In one work, a red one of these objects is stretched slightly to represent a peasant woman in two dimensions. Much of Ellsworth Kelly's work consists of random arrangements of these objects made from colored paper, such as in his *Spectrum of Colors Arranged by Chance*. While at Yale, one artist made hundreds of color-interaction studies by nesting these objects within each other; that series is *Homage to [these]* by Josef Albers. Holding these shapes to be the "first step of pure creation," Kazimir Malevich created a painting consisting entirely of a black one and showed a different one tilted slightly in *White on White*. For 10 points, name these four-sided regular polygons.

ANSWER: squares [prompt on "quadrilaterals"]

11. Operation Flipper was a disastrous attempt to raid the headquarters of this man, who personally directed the use of 80-millimeter anti-aircraft guns against tanks during the Battle of Arras. In this man's final military post, he set up a large array of wooden posts to prevent glider landings, known as his "asparagus." Operation Crusader lifted this man's siege of Tobruk. This man was forced to evade a line of land mines and barbed wire stretching to the Qattara Depression, which he called "devil's gardens," resulting in his defeat by Bernard Montgomery. After his implication in the July Plot to assassinate Hitler, this man committed suicide to remain a hero for his service at Kasserine Pass and El Alamein. For 10 points, name this Nazi commander of the *Afrika Korps*, nicknamed "Desert Fox."

ANSWER: Erwin Johannes Eugen Rommel [prompt on "Desert Fox"]

12. Schubert's composition of this type and number concludes with a *Presto vivace* finale that begins pianissimo, and like his first entry in the genre, it is in D major. Another piece of this type and number was composed during a single summer at Wiesbaden in 1883 and was premiered that year by Hans Richter. That piece of this type and number employs a rising F-A-flat-F motif that represents the composer's motto, "frei aber froh," and was written in F major by Johannes Brahms. Another piece of this type and number begins with two loud E-flat major chords played by the entire orchestra, features a C minor funeral march as its second movement, and is often used to mark the birth of musical Romanticism. For 10 points, name this type of work and number, of which Beethoven's is known as the "Eroica."

ANSWER: Symphony No. 3 [or Third Symphony]

13. According to Nonnus, twelve sons of this god fought with Dionysus in India. In various sources, a version of this god was made into a constellation after helping Zeus fight Typhon. Herodotus groups him with Heracles and Dionysus as young Greek gods adapted from old Egyptian gods. This god's children include Iynx and Acis, and in some myths, he is born to Penelope after she sleeps with one or all of the suitors. In several stories this son of Hermes pursues the nymph Echo. In the *Metamorphoses*, Mercury lulls Argus to sleep with a story of this god chasing a nymph to the river Ladon, where she is turned into reeds. After pursuing Syrinx, he fashioned a pair of pipes. For 10 points, name this Greek counterpart of the Roman Faunus, a goat-legged god of the wild.

ANSWER: Pan [accept Faunus before mention; accept Aegipan]

14. Part of this structure is absent in a syndrome that can cause mega cisterna magna, and which is named for Dandy and Walker. This structure contains the fastigial, globose, emboliform, and dentate nuclei, which are collectively called its namesake "deep nuclei" and are located in the arbor vitae. Marr and Albus proposed theories of this structure's function. This structure includes a narrow medial tissue called its namesake vermis. Inputs in this structure diverge to stimulate a huge number of namesake granule cells, then converge to stimulate a much smaller number of Purkinje cells, which are among the largest neurons. For 10 points, name this portion of the brain involved in balance and motor skills, which is located under the cerebrum.

ANSWER: cerebellum [prompt on brain until "namesake" is read]

15. This man wrote a parody of boy-meets-girl stories in which a writer comes up with a variety of ways Justin Horgenschlag and Shirley Lester could fall in love. This author of "The Heart of a Broken Story" also wrote about Ginnie Mannon's awkward conversation with the Graff family. This man described a preternaturally intelligent young boy who foretells his death at the hands of his violent sister Booper, and who believes he is the reincarnation of a Hindu holy man. In another story by this author of "Teddy" and "Just Before the War with the Eskimos," a man at the beach helps Sibyl Carpenter look for the title animals before shooting himself in his hotel room. For 10 points, name this creator of the Glass family, the author of "A Perfect Day for Bananafish."

ANSWER: Jerome David Salinger

16. Complexes of bisoxazolines and these species can be used to induce enantioselectivity into aldol and Mannich-type reactions. One method to test the "strength" of these species adds a triethylphosphine oxide probe followed by phosphorus-31 NMR analysis; that is the Gutmann-Beckett method. The addition of these substances to acetals can influence whether acetal substitution occurs by an SN1 or SN2 mechanism. These substances are needed to activate the carbonyl group in the Sakurai reaction. These compounds typically catalyze an electrophilic aromatic substitution reaction which alkylates or acylates an aromatic ring. Friedel-Crafts reactions can be catalyzed by aluminum chloride or boron trifluoride, both examples of these species. For 10 points, name these acids which accept pairs of electrons.

ANSWER: Lewis acid [prompt on "acid" before mention]

17. A follow-up to this work includes interviews with people like "Henry Friend" and Harlem resident "Mrs. Sarah Cartwright." This work argues that competing "veto groups" prevent the existence of a ruling class. This book's final section analyzes obstacles to autonomy in work and in play, and it claims that the "inside-dopester" has replaced the moralizer in American politics. This book opens with a discredited argument connecting rates of population growth to the differing types of social character. This study uses the metaphor of people who use radar instead of a "psychic gyroscope" to explain the transition from "inner-directed" to "outer-directed." For 10 points, name this book written with Reuel Denney and Nathan Glazer, a study of character in postwar America by David Riesman.

ANSWER: *The Lonely Crowd*

18. These people created a linen-based book named for its current location in Zagreb, which was discovered with a mummy in Egypt. Elongated sculptural figures made by these creators of the *Liber Linteus* were a primary influence on Giacometti's *Walking Man*, and these people also created a bronze model of a sheep's liver found at Piacenza. These victors at Alalia lost a major city when Camillus breached its sewers. One of their kings survived an assassination attempt by Gaius Mucius Scaevola, who thrust his hand into a flame to show his resolve; that king was Lars Porsenna of Clusium. Veii was part of this civilization, which produced the Roman Tarquin dynasty. For 10 points, name these ancient Italian people based in Tuscany who served as an early rival to the Romans.

ANSWER: Etruscans

19. The final poem of this collection begins: "to a child who is fond of maps and engravings / the universe is the size of his immense hunger." Another poem in this collection, from which six "condemned poems" were excised after its first edition, compares the decline of his home city to the fall of Andromache and includes an image of the title bird "reproaching God." In addition to "The Voyage" and "The Swan," this collection's opening poem mentions a personification who "dreams of scaffolds as he smokes his hookah pipe," and addresses you as the "Hypocrite reader!" For 10 points, name this collection which popularized the term *ennui*, whose sections "Wine," "Death," "Revolt," and "Spleen and Ideal" were penned by French Symbolist poet Charles Baudelaire.

ANSWER: *The Flowers of Evil* [or *Les Fleurs du Mal*]

20. High-resolution UV images of this body in 1995 by the Hubble space telescope showed a dark-spot on its surface that was named after its discoverer. The surface composition of this body consists of a significant amount of hydrated minerals, as well as iron-rich phyllosilicate clays and carbonates. It's not Uranus, but this object's existence was predicted by the Titius-Bode law, though that law was disproven by the discovery of Neptune in 1846. In Spring 2015, *Dawn* is expected to enter an orbit around this object after a year surveying Vesta. First thought to have been a comet by Giuseppe Piazzi in 1801, this celestial body is now classified as the smallest member of a group with constituents Haumea, Eris and Pluto. For 10 points, identify this dwarf planet of the asteroid belt.

ANSWER: 1 Ceres

TB. In one essay, this thinker derided people who have "strong moral convictions," but no political principles that allow for accommodating those with different morals. This thinker proposed replacing the traditional political line with a triangle, because socialists and conservatives often agree on matters such as imperialism. This author called himself an "unrepentant Old Whig" because his idea of "liberalism" didn't match current parties in an essay that attacked the title ideology for wanting to "stand still." This author of "Why I am Not a Conservative" wrote in a prominent book that the examples of Soviet Russia and the Nazis show that central planning of the economy will inevitably lead to tyranny. For 10 points, name this Austrian economist who wrote *The Road to Serfdom*.

ANSWER: Friedrich August von Hayek

## Bonuses

1. A massacre ten days prior to this event was uncovered by journalist Elena Poniatowska, who interviewed people that saw shootings of students in the Plaza de Tres Cultura. For 10 points each:

[10] Name this event which went on despite the Tlatelolco massacre. Tommie Smith and John Carlos were expelled from these multi-day proceedings for making a raised-fist black power salute.

ANSWER: 1968 Summer Olympics [or Olympic Games of 1968; or Mexico City Olympic Games]

[10] Dissatisfaction with this party, which ruled Mexico for 71 years straight, inspired the student protestors at Tlatelolco. Vicente Fox dislodged them in 2000.

ANSWER: PRI [or Industrial Revolutionary Party; or Partido Revolucionario Industrial]

[10] To protest the Tlatelolco massacre, this man resigned as Mexico's ambassador to India. This public figure drew ire for printing the words of Eastern European dissidents in Latin America in his journals *Plural* and *Vuelta*.

ANSWER: Octavio Paz Lozano

2. A mechanism named for this physicist involves spontaneous symmetry breaking by the W and Z bosons as induced by a similarly named field that permeates all space. For 10 points each:

[10] Name this 2013 Nobel Laureate, a British physicist who theorized and gives his name to a related particle that creates the aforementioned field, explaining the origin of mass.

ANSWER: Peter Ware Higgs

[10] The hierarchy problem concerns the discrepancy between the mass of the Higgs boson and the Planck mass, but can also be formulated as a question of why this force is roughly 10 to the 32<sup>nd</sup> times stronger than gravity.

ANSWER: weak force [prompt on "electroweak"]

[10] According to this hypothesis, gravity is as weak as it is because the universal gravitational constant is actually inversely proportional to the age of the universe. It also states that the universe's mass scales as its age squared.

ANSWER: Dirac large numbers hypothesis [or LNH]

3. According to Tarski's "semantic" theory of this concept, it can only be assessed in a language *L* by using a broader "meta-language" of which *L* is a subset. For 10 points each:

[10] Name this property. The "correspondence" theory of it implies that it holds for a sentence if that sentence accurately relays something in the real world.

ANSWER: truth [or being true]

[10] This pro-science philosophical school, which grew out of Rudolf Carnap's Vienna Circle, divided all true statements into analytic truths and sentences defined using the verification principle.

ANSWER: logical positivism [or logical empiricism; prompt on "positivism," "empiricism," or "analytic philosophy"]

[10] In this theory of truth, a person believes that a proposition *p* is true if and only if they assent when somebody else says "*p*" out loud. Saul Kripke attacked the principle underlying this theory in "A Puzzle About Belief."

ANSWER: disquotational theory of truth [or weak disquotational principle; or strong disquotational principle; prompt on "deflationary"]

4. This group within the Committee of Union and Progress umbrella party launched a namesake revolution in 1908 and solidified its power after the 31 March Incident. For 10 points each:

[10] Name this reformist group from the Ottoman Empire that overthrew the absolute monarchy and ushered in the Second Constitutional Era.

ANSWER: Young Turks [or Genç Türkler; or Jön Türkler]

[10] The Young Turk Revolution removed this Ottoman ruler from power. This man was called the "Red Sultan" after his troops massacred Armenians in the 1890s, and was succeeded by his brother Mehmed V.

ANSWER: Abdul Hamid II [or İkinci Abdülhamit]

[10] Abdul Hamid's modernization goals led to the construction of one of these in the Hejaz region, running from Damascus to Medina. Sergei Witte helped launch the construction of a different one across Siberia.

ANSWER: railways [or railroads; or rail networks; do not accept "trains"]

5. This god taught people how to avoid the plague by hanging a plaited straw rope over their door. For 10 points each:

[10] Name this Shinto god who threw a flayed horse through the roof of his sister Amaterasu, and won a sword called the Grasscutter, or Kusanagi, by killing the dragon Orochi.

ANSWER: Susano'o-no-Mikoto [or Susanowo]

[10] Susano'o put this god through trials such as sleeping in a room of snakes and finding an arrow in a burning field, before letting him marry Susano'o's daughter Suseri-hime. Ninigi replaces this god as a ruler of part of Japan.

ANSWER: Okuninushi

[10] Susano' was born from this god's nose. This god vowed to make 1500 babies be born every day after his wife became trapped in Yomi, the underworld.

ANSWER: Izanagi

6. Some results of this meeting included revisions to the use of the terms "absolution" and "confirmation," as well as permission to carry out baptisms in private homes. For 10 points each:

[10] Name this 1604 meeting prompted by the thousand-signature Millenary Petition, which contained demands by the Puritans for a reformed Anglican Church to begin the reign of the new king.

ANSWER: Hampton Court Conference

[10] The conference resulted in the creation of this book under the oversight of Richard Bancroft. This translation of the Bible eventually became the most widely printed book in history.

ANSWER: King James Bible [or King James Version of the Bible; or Authorized Version of the Bible; or KJV; or AV; or KJB]

[10] Before he took the English throne, James presided over one of these events in North Berwick that resulted in the deaths of Agnes Simpson and Gillis Duncan. James later discussed these events in his *Daemonologie*.

ANSWER: witch trials [or witch hunts]

7. In this play, Tobias jokes about his wife's concern that she may someday go mad. For 10 points each:

[10] Name this play in which Tobias and Agnes allow the distressed couple Harry and Edna to stay in the bedroom of their daughter Julia, who is disturbed to find it occupied when she comes home after a divorce.

ANSWER: A Delicate Balance

[10] Other odd couples in plays by this author of *A Delicate Balance* include *Zoo Story*'s Peter and Jerry, as well as George and Martha from *Who's Afraid of Virginia Woolf?*

ANSWER: Edward Albee

[10] In *Who's Afraid of Virginia Woolf?*, Nick realizes this fact about George and Martha's family after George says an unseen character died trying to drive around a porcupine and Martha shouts, "you cannot do that!"

ANSWER: their alleged son does not exist [or that George and Martha are childless; or that George and Martha never had a child; accept other answers indicating that their male child is any of the following: not real; fictional; imaginary; made up; never existed; etc.; do not accept or prompt on "their son is dead"]

8. It is thought that this man borrowed the face from his *Portrait of a Young Woman*, also called *Antea*, for one of the crowd of angels on the left of his best known painting. For 10 points each:

[10] Name this Italian mannerist painter who showed an old man with a scroll in the corner of his *Madonna of the Long Neck*.

ANSWER: **Parmigianino** [or Girolamo Francesco **Mazzola**]

[10] Parmigianino's *Self-Portrait in a Convex Mirror* is a tondo, which means that it has this property. Other artworks with this property include Brown's *The Last of England* and Botticelli's *Madonna of the Pomegranate*.

ANSWER: **circular** [or **round**; accept word forms and equivalents]

[10] In this other Parmigianino painting, the title saint sleeps in the background, dressed in red with his hat lying beside him. It shows John the Baptist with a leopard skin draped around his knee as he points up toward the Madonna and Child.

ANSWER: *The **Vision of Saint Jerome***

9. This holiday commemorates the martyrdom of Ali's son Hussein at Karbala. For 10 points each:

[10] Name this fast day observed on the 10<sup>th</sup> day of Muharram. In Shi'a Islam, particularly extreme observers of this day engage in public self-flagellation as an act of grief.

ANSWER: Day of **Ashura**

[10] Many Shi'a Muslims mourn Husayn again this number of days after Ashura occurs, within the month of Safar. Muhammad had his first Quranic revelation when he was this many years old.

ANSWER: **40** days after [or **40** years old][*This observance is called Arba'een, which means "40" in Arabic.*]

[10] Another thing that lasted 40 days in Abrahamic tradition was this event, which was starting to subside as a 300-cubit-long wooden structure got stuck on Mount Ararat with many pairs of animals inside.

ANSWER: Great **Flood** [or **Deluge**; or Noah's **Flood**]

10. Hydrogen is very rarely recognized as an example of this type of element, found on either side of a dividing line that cuts diagonally across the right side of the periodic table. For 10 points each:

[10] Name this group of elements which includes boron, germanium, and arsenic. They have high reflectivities but are often poor conductors and are brittle.

ANSWER: **metalloids** [accept **semimetals**]

[10] The oxides of metalloids often have this property, which is due to their ability to react *both* with acids to generate salts *and* with bases to generate negatively-charged hydroxo-coordination compounds.

ANSWER: **amphoteric** [do not accept "amphiphilic"]

[10] These phases, named for a German chemist, are formed by reaction of group I or II metals with post-transition metals or metalloids. Examples include NaSi [**n.a.s.i.**], in which sodium ions are interspersed in a lattice of silicon tetrahedra with a minus 4 charge.

ANSWER: **Zintl** phases

11. This novel contains the stories of those who emerge nonverbal from a "forest of self-loss". For 10 points each:

[10] Name this novel in which the narrator of each section interprets tales told only with gestures and tarot cards.

ANSWER: *The **Castle of Crossed Destinies*** [or *Il **castello dei destini incrociati***]

[10] This Italian author of *The Castle of Crossed Destinies* intercut fragments of fictional novels with second-person sections about "you, the reader" in *If on a Winter's Night a Traveler*.

ANSWER: Italo **Calvino**

[10] The eccentric title character of this Calvino novel attends Mass through a church window and eventually leaves his native land by grabbing hold of the anchor line of a passing hot air balloon.

ANSWER: *The **Baron in the Trees*** [or *Il **barone rampante***]



12. The 19th of them asserted that the solutions of regular problems in the calculus of variations were always analytic and was proved independently by de Giorgi and Nash. For 10 points each:

[10] Name this set of 23 problems, proposed in 1900 by a German mathematician who also names a potentially infinite-dimensional type of complete vector space equipped with an inner product.

ANSWER: David Hilbert's problems for the 20th century [accept Hilbert spaces]

[10] The first of Hilbert's problems is this conjecture, which was shown to be undecidable under the ZFC axioms. It asserts that there exists no set with cardinality between that of the natural numbers and the real numbers.

ANSWER: continuum hypothesis

[10] Hilbert's 7th problem was resolved by this theorem, which established the transcendence of numbers of the form  $a$  to the  $b$ , where  $a$  is algebraic and not equal to zero or one, and  $b$  is irrational and algebraic.

ANSWER: Gelfond-Schneider Theorem

13. In a chilling scene in this movie, the protagonist has to fish a corpse's arms out of a lake and hold the hands while a woman cuts them off with a chainsaw. For 10 points each:

[10] Name this 2010 film set in the Missouri Ozarks, in which teenager Ree Dolly needs to find her father before he skips bail.

ANSWER: Winter's Bone

[10] This actress had her breakout playing Ree in *Winter's Bone*. She received an Oscar for *Silver Linings Playbook*, and stars as Katniss Everdeen in the *Hunger Games* movies.

ANSWER: Jennifer Lawrence

[10] This actor received an Oscar nomination for playing Ree's addict uncle Teardrop in *Winter's Bone*. This star of *Me and You and Everyone We Know* and *The Sessions* played Jewish merchant Sol Star on HBO's *Deadwood*.

ANSWER: John Hawkes

14. Answer the following about the *Federalist* Papers, for 10 points each.

[10] This Virginian author of about thirty *Federalist* Papers, a future President, was the only author of the three not to live in New York, where they were published.

ANSWER: James Madison

[10] In *Federalist* 10, Madison argues that these entities, defined as "a number of citizens ...united and actuated by some common impulse...adverse to the rights of other citizens," are weakened by a republic of large size.

ANSWER: factions [do not accept any synonyms]

[10] This other Madison *Federalist* paper argues that "Ambition must be made to counteract ambition" via a system of checks and balances. It also claims that "If men were angels, no government would be necessary."

ANSWER: *Federalist* No. 51 [or "The Structure of the Government Must Furnish the Proper Checks and Balances Between the Different Departments"]

15. Carlo Gesualdo wrote six increasingly experimental books of these pieces. For 10 points each:

[10] Name this genre of secular polyphonic vocal compositions, which were popular during the Renaissance. They originated in Italy.

ANSWER: madrigals

[10] This Italian composer of nine books of madrigals helped usher in the Baroque era and composed the innovative operas *The Coronation of Poppea* and *L'Orfeo*.

ANSWER: Claudio Monteverdi

[10] Some Italian madrigals were composed by this Dutch organist who served for forty years in the Oude Kerk in Amsterdam. His organ compositions include a notable *Fantasia Cromatica*, and he is often considered the founder of the North German school of organ composers.

ANSWER: Jan Pieterszoon Sweelinck

16. This girl replies that she does not believe in God when a fugitive asks her to pray for him. For 10 points each:

[10] Name this young daughter of a banana plantation owner. She refuses to let a police lieutenant search their property for the whiskey priest.

ANSWER: Coral Fellows [prompt on "Fellows"]

[10] This author who included Coral Fellows in *The Power and the Glory* also described the naïve CIA agent Alden Pyle in *The Quiet American*.

ANSWER: Graham Greene

[10] In this other novel by Graham Greene, a salesman named James Wormold is ill-advisedly hired as a secret agent and literally makes his work up as he goes along.

ANSWER: Our Man in Havana

17. This man conducted dubious experiments which purported to show that people find rectangles with sides approximating the golden ratio more aesthetically pleasing. For 10 points each:

[10] Name this father of psychophysics. His namesake law, an expansion of Weber's law, states that the response to a stimulus is proportional to the log of the stimulus's intensity.

ANSWER: Gustav Fechner

[10] Hermann Ebbinghaus adapted Fechner's principles to study this mental faculty, creating the forgetting curve. Its "short term" form can use about four facts, less than an early estimate of "7 plus or minus 2."

ANSWER: memory [or short-term memory; or working memory]

[10] Fechner made predictions about people who have undergone this procedure, which were confirmed by experiments of Roger Sperry. People who have undergone this procedure suffer from "alien hand syndrome" and cannot verbalize about objects that they see with their left eye.

ANSWER: split-brain surgery [or corpus callosotomy; accept any answer which indicates cutting the corpus callosum; prompt on "lobotomy," "separating the hemispheres," or "epilepsy treatment"]

18. This system is activated when IgG or IgM binds to the C1 complex. For 10 points each:

[10] Name this component of the innate immune system that is activated by "classical" and "alternative" pathways, consisting of a few dozen proteins and fragments synthesized in the liver and circulating through the bloodstream.

ANSWER: complement system [or complement pathway]

[10] In the complement system, two enzymes of this type perform the cleavage of C3 and C5, respectively. These enzymes belong to the serine protease family.

ANSWER: convertases

[10] These cells, whose name means "big eaters," help devour the pathogens targeted by the complement system.

ANSWER: macrophages

19. This man is the subject of Chen Kaige's 2008 film released under the English title *Forever Enthralled*. For 10 points each:

[10] Name this man, the most renowned of the Four Great Dan, who was known for roles such as Yu in *Farewell My Concubine* and Du Liniang in *The Peony Pavilion*.

ANSWER: Mei Lanfang [or Mei Lan]

[10] The Four Great Dan became famous playing roles of this type. In English theater, roles of this type were played by young boys until the Restoration.

ANSWER: female [or women]

[10] The Four Great Dan acted in this popular variety of Chinese opera that came to prominence in the 1800s. It features two main varieties of music: Xipi and Erhuang.

ANSWER: Peking Opera [or Beijing Opera]

20. In this novel, a parent worries that a holiday pageant will teach children that Christmas does not count unless snow falls like it does in foreign countries. For 10 points each:

[10] Name this novel depicting the romance of Obinze, who lives illegally in London, and Ifemelu, who immigrates to the United States, writes a blog called Raceteenth, and wins a fellowship at Princeton.

ANSWER: Americanah

[10] *Americanah* is a 2013 novel by this author, who also wrote about the teenaged Kambili Achike and her family in her novel *Purple Hibiscus*.

ANSWER: Chimamanda Ngozi Adichie

[10] Adichie was born in this country; she wrote about its civil war in her novel *Half of a Yellow Sun* and her play *For Love of Biafra*.

ANSWER: Federal Republic of Nigeria

21. Spartacus was betrayed by a group of these people, who had agreed to assist him in spreading his revolt to Sicily. For 10 points each:

[10] Name these people who were suppressed by Pompey after the *Lex Gabinia* granted him *imperium* throughout the Mediterranean and 50 miles inland from every coast. Cilicia was a stronghold for these people.

ANSWER: Cilician pirates

[10] The *uskoks* were a group of pirates and irregular soldiers active primarily in this body of water, operating out of their bases in Dalmatia.

ANSWER: Adriatic Sea

[10] This other group of pirates had their base at Visby on Gotland but was driven out by the Teutonic Knights. This group had earlier helped Albert of Mecklenburg defend Stockholm from the forces of Margaret of Denmark.

ANSWER: Victual Brothers [or Vitalians; or Vitalian Brotherhood; prompt on "Likedealers"]