The Illinois Mathematics and Science Academy of Aurora, IL presents

IMSANITY 4

-ROUND 3-

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with special contributions from...
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Tossups

(1) In this piece, zvons are played against thirteen consecutive A flats. Another part of this work includes a theme taken from its composer's opera *The Voyevoda*. The folk tune *At the gate, at my gate* is played by the woodwinds in this piece, which was commissioned for the consecration of the Cathedral of Christ the Savior. The playing of(*) *La Marseillaise* is eventually replaced by *God Save the Tsar* and cannonfire in this work. For ten points, identify this piece commemorating Russia's defense against Napoleon's invading army, written by Pyotr Tchaikovsky.

ANSWER: 1812 Overture (or Overture of 1812 or Festival Overture: The Year 1812)

(2) The last of these principles utilizes recommendations from a group organized by Edward House called "The Inquiry". Another of these principles one mandates a disputed coal-producing territory be returned to its original owner, and an "impartial adjustment of all colonial claims" is the focus of another. Free passage through the Dardanelles and sea access for Poland are other principles collected in a document with this name. The last of these principles called for a(*) "general association" and was realized by the League of Nations. For ten points, name this speech outlining actions to be taken after World War I given by Woodrow Wilson.

ANSWER: Fourteen Points

(3) The probability that two random integers are coprime is six divided by the square of this number. Lindemann proved that this number is transcendental after Lambert had shown it to be irrational. This value can be approximated using Buffon's Needle, and Archimedes approximated it by finding the perimeter of a 96-gon. This is the period of the(*) tangent function and the arccosine of negative one. This number of radians is equivalent to one hundred eighty degrees. For ten points, name this constant multiplied by r-squared to find the radius of a circle, and roughly equal to 3.14.

ANSWER: pi

(4) This city has sixteen musically-inspired sculptures in its Stravinsky Fountain. This city is also home to a building holding Europe's largest modern art museum, the exterior of which features escalators and color-coded pipes and was designed by Renzo Piano and Richard Rogers. Maurice Koechlin and Stephen Sauvestre initially designed another structure in this home of the(*) Pompidou Center. That cast-iron building's low wind resistance allowed it to become the world's tallest building at its completion for the 1889 World's Fair. For ten points, identify this city whose architecture includes I.M. Pei's Louvre Pyramid and the Eiffel Tower.

ANSWER: Paris, France

(5) One character in this novel starts to write a novel about Elaine, noting the luckiness that both their names have six letters. In one scene in this novel, Joan plays the bottom half of *Chopsticks* while DeeDee plays the top. The protagonist occasionally pretends to be an orphan from Chicago named Elly Higginbottom, and under this name she fights to stop Marco from raping her while Doreen is on a date with Lenny Shepherd. The protagonist interns with Jay Cee, and(*) Philomena Guinea pays for her to go to a private hospital and meet Dr. Nolan. Following six months in the life of the suicidal Esther Greenwood, for ten points, identify this novel by Sylvia Plath.

ANSWER: The Bell Jar

(6) One work by this author began with characters who don't know if their queen is alive or dead, and ends with that queen's three day silence, after which she is fully alive. In another play by this author, Evadne throws herself onto her husband's funeral pyre. He wrote about Heracles bringing back the wife of Admetus in *Alcestis*, and also wrote *The Suppliants*. Talthybius brings the body of Astyanax to Hecuba for burial in this author's(*) *Trojan Women*. In one play, Agave carries around the head of her son Pentheus. In another work, the title character gives poisoned robes to Glauce before killing her children and abandoning Jason. For ten points, identify this ancient Greek author of *The Bacchae* and *Medea*.

ANSWER: Euripides

(7) Early texts in this religion are the *Records of the Transmission of the Lamp* as well as *The Blue Cliff Records*, the latter of which sees the question of "What is the highest meaning of the holy truths" answered "Empty, without holiness". The Rinzai school of this faith emphasizes Kenso and satori practices, and members of the Soto school practice shikantaza. Questions in this faith include "What is the sound of one hand clapping" and are known as(*) koans. This faith, originally a sect of Mahayana, was founded by Bodhidharma. For ten points, name this school of Buddhism focused on meditation and popular in Japan.

ANSWER: Zen Buddhism (accept Chan, Thie, or Seon; prompt on "Mahayana" or "Buddhism" until mentioned)

(8) **One leader of these people was defeated by Robert Napier near Magdala and was called Theodore II. The Mahfuz of Haran attacked these people, and one name for them is Habashat. Frumentius of Tyre traveled to these people, who were then led by King Ezana. Another leader of these people was Zara Yakob, and translation difficulties in the Treaty of Wuchale led to an invasion of these people, who were victorious at the ensuing Battle of Adwa. These people were led for a time by the Derg, and one king of these spoke out at the League of Nations against its**(*) invasion by Italy. For ten points, name these people who were led by Menelik II and Haile Selassie, the former of whom established its capital of Addis Ababa.

ANSWER: Ethiopians (accept Axumites, accept Abyssinians)

(9) **In this show, the protagonist was arrested in Latham, Massachusetts for violating the Good Samaritan law. This show had a character who converted to Judaism to tell Jewish jokes named Tim Whatley. In the final episode, four characters are sentenced to one year in prison by Judge Arthur Vandelay. An aluminum pole and feats of strength are part of an alternative**(*) holiday on this show called Festivus. Neighbors of this show's protagonist include a mailman named Newman and Cosmo Kramer. For ten points, name this sitcom featuring characters like George Costanza and Elaine Benes, both friends of the title comedian.

ANSWER: Seinfeld

(10) **"Uranium X_2" and "Uranium Z" were the first discovered compounds exhibiting the nuclear variety of this phenomenon. Hydrogen exhibits the spin variety of this phenomenon in its para and ortho forms. Friedrich Woehler noticed this phenomenon when preparing silver cyanate, and Cahn, Ingold, and Prelog name a set of rules for naming another variety of it which uses R/S and E/Z descriptors.**(*) Tautomers exhibit this phenomenon with respect to a hydrogen atom. Describing relationships between the cis and trans fatty acids, for ten points, name this term that describes molecules with the same molecular formula but different atomic arrangement.

ANSWER: isomerism

(11) **This deity is often combined with the Phrygian god Sabazios. This deity was torn apart by titans, and from his blood, the first pomegranate tree sprung. This god tricked the Thracian king Lycurgus into killing his own son with an axe, and he turned all but the helmsman of a pirate crew, Acoetes, into dolphins. This deity wielded a wand adorned with honey and ivy, and his women followers were known as**(*) maenads. This figure was "twice born" as the result of being implanted in Zeus's thigh after Zeus appeared undisguised to this god's mother, Semele. For ten points, name this Greek god of wine.

ANSWER: Dionysus

(12) **In one of this author's works, the pikeman Chicot's wife goes into labor, and he is killed while looking at wooden beams. Another of his novels sees a couple visit the Louvre after their wedding and Gervaise become an alcoholic alongside her husband. That couple's daughter dies from smallpox after ruining men, including Georges Hugon, in this author's *Nana*. Catherine Maheu falls in love with Etienne Lantier, a man who later leads a coal mining strike in**(*) *Germinal.* For ten points, identify this author who claimed that Ferdinand Esterhazy, and not Alfred Dreyfus, committed treason in the open letter *J'Accuse.*

ANSWER: Émile (Édouard Charles Antoine) <u>Zola</u>

(13) **Fossils found in Oman show four of these structures clumped in a tetrad, suggesting that they did not separate until much later in their evolution. Species that exhibit apomixis do not produce these entities, and in the genus Gingko they pass through the micropyle before settling under the integument. Mitosis in their haploid precursor produces a**(*) tube cell and a generative cell, and monocots and eudicots differ in the number of furrows on their exterior. In some species, they are produced in anthers and spread by insects, but those for conifers are spread by wind. For ten points, name these carriers of male gametes in plants sometimes spread to flowers by bees.

ANSWER: <u>pollen</u>

(14) **A few years before this event, one person involved heard a cry that a serpent was loose, saw blood on corn, and saw hieroglyphs on leaves. One week before the start of this event, a bluish-green sun was seen as a signal to begin. Thomas Gray took the *Confessions* of a leader of this event. Those involved in this event failed to reach Jerusalem, and men from the *USS Natchez* and *USS Warren*(*)** suppressed it in Southampton County. It saw the sleeping Travis family murdered, and after this event, laws were passed making it illegal to teach slaves how to read or write. For ten points, name this 1831 slave rebellion led by a man deemed "The Prophet".

ANSWER: Nathaniel <u>Turner</u>'s Slave <u>Rebellion</u> (accept <u>Southampton Insurrection</u> prior to mention, accept "revolt" or equivalents for "rebellion")

(15) **This thinker wrote about the "penalty of taking the lead" in *Imperial Germany and the Industrial Revolution*, and he wrote about the overthrow Capitalism in *The Engineers and the Price System*. This man wrote about the "gambling proclivity" and housewives performing "drudgery" in order to signal that they are a part of the title entity in his most famous work. This man is the namesake of a**(*) good whose demand increases with price. For ten points, name this Norwegian-American economist whose book *The Theory of the Leisure Class* introduced the term "conspicuous consumption.

ANSWER: Thorstein <u>Veblen</u>

(16) **Two emission events of these particles nicknamed Bert and Ernie were observed by the IceCube observatory. One of the mixing angles of the PMNS matrix is to be measured by the T2K experiment, which aims a beam of these particles. The mass of these particles can be understood by the seesaw mechanism. This particle along with a positron is released in beta plus decay, and the**(*) OPERA experiment observed this particle's incorrect faster-than-light velocity. It exhibits oscillation between its tau, muon, and electron flavors. Named by Enrico Fermi and postulated by Wolfgang Pauli, for ten points, name these neutral, weakly interacting particles.

ANSWER: <u>neutrino</u>

(17) **This artist painted a watercolor of a patch of plants, including dandelions and plantains, called *Great Piece of Turf*. This artist created a series of complex Celtic ornamentations, including one "with a heart-shaped shield", called his namesake knots. An anatomically-incorrect shelled pachyderm is depicted in his *Rhinoceros*. A lion sleeps next to a dog in this man's**(*) woodcut *St. Jerome in his Study*, while a dog walks between horses carrying the title figures in his *Knight, Death, and the Devil*. For ten points, name this German artist who depicted a Latin square behind a sad angel in his engraving *Melancholia I*.

ANSWER: Albrecht <u>Dürer</u>

(18) **This object is guaranteed by the one-dimensional case of the Ham Sandwich Theorem. These points on a quadrilateral can be joined to form a Varignon quadrilateral. The circumcenter of a triangle projects on to these points on the sides. This point can be found by connecting the intersections of circles of equal radius centered at two given points. This point on a diagonal of a rhombus is at the**(*) intersection with the other diagonal, and the center of a circle is can be found at this location on a diameter. This point occurs where a line segment meets its bisector. For ten points, name this point halfway between two given points.

ANSWER: <u>midpoint</u> (accept perpendicular <u>bisector</u> before "points")

(19) **This author wrote "The child is father of the man" in a poem that begins "My heart leaps up when I behold / A rainbow in the sky," and in another poem, the narrator and Ruth both help "The old huntsman," Simon Lee. This man wrote "We have given our hearts away" in *The World is Too Much with Us*. This author wrote a poem that began**(*) "Five years have passed" and was addressed to his sister Dorothy, and another poem that begins "I wandered lonely as a cloud" is sometimes titled *Daffodils*. For ten points, identify this British poet of *Tintern Abbey* who collaborated with Samuel Taylor Coleridge on *Lyrical Ballads*.

ANSWER: William <u>Wordsworth</u>

(20) **One holder of this office ended the separation of schools for a Catholic minority in an agreement named for him and Thomas Greenway. Another man in this position put down Louis Riel's Red River Rebellion and lost popular support after bribes to railroad officials were exposed in the Pacific Scandal. The administration of another person with this role saw the negotiation of the**(*) Charlottetown and Meech Lake Accords. A man in this office, who wanted to create a "just society", responded "just watch me" during the October Crisis. For ten points, name this office held by John Macdonald, Pierre Trudeau, and Stephen Harper which oversees the government in Ottawa.

ANSWER: Prime Minister of Canada

(21) **One character in this novel is almost buried with the words "And Lot said unto them, Oh not so, my Lord." In another scene, the protagonist helps prevent a riot from two people fighting over a girl at a dance. One character in this novel loans another money to buy sugar, and Mae is left a hefty tip after she greatly reduces the price of candy. One character's dreams that her husband will study radio are shattered when**(*) Connie Rivers abandons her, and the former preacher Jim Casy is killed while advocating for unions. Tom and Rose of Sharon appear in, for ten points, what novel about the Joad family, a work by John Steinbeck?

ANSWER: The Grapes of Wrath

Bonuses

(1)   One character in this novel wrote a letter which compared a communist government to Oedipus. For ten points each:
[10] Identify this novel about the mistress Sabina, whom the surgeon Tomas leaves in Prague when he moves to Zurich with his wife Tereza.
ANSWER: The Unbearable Lightness of Being
[10] *The Unbearable Lightness of Being* is a work by this Czech author, who included Tamina's attempts to regain love letters and the relationship between Eva, Karel, and Marketa in *The Book of Laughter and Forgetting*.
ANSWER: Milan Kundera
[10] In *The Unbearable Lightness of Being*, a dog which dies of cancer is named after this Leo Tolstoy character, who cheats with Count Vronsky and throws herself under a train.
ANSWER: Anna Karenina (accept either underlined part)

(2)   This man patented a namesake carbine rifle. For ten points each:
[10] Name this general who succeeded George McClellan as the Commander of the Potomac, who lends his name to a style of facial hair. He captured the coast of North Carolina as part of the Anaconda Plan.
ANSWER: Ambrose Burnside
[10] Burnside led the "Mud March" at this battle, and unsuccessfully tried to take Marye's Heights using pontoon bridges. It was an overwhelming confederate victory for Robert E. Lee.
ANSWER: Battle of Fredericksburg
[10] Burnside was succeeded as Commander of the Army of the Potomac by this man. This "fighting" general was defeated by a smaller Confederate force under Lee at the Battle of Chancellorsville.
ANSWER: Joseph Hooker

(3)   The "Grandfather" deities in this myth system include God L and God K. For ten points each:
[10] Name this Mesoamerican myth system narrated in the *Chilam Balam* and the *Popol Vuh*.
ANSWER: Mayan Mythology
[10] These figures in Mayan mythology were born after their father's decapitated head spit into a woman's hand. They rebuilt their slain father, One Hunahpu, and after they defeated the Lord of Xibalba, these figures became the sun and moon.
ANSWER: Hero Twins (accept Hunahpu and Xbalanque in either order)
[10] The Hero Twins defeated this demon bird by removing the jewels from his teeth and eyes, and they later defeated this figure's sons, Zipacna and Cabrakan.
ANSWER: Seven-Macaw (accept Vucub Caquix)

(4)   Cities in this country include Huamba and Benguela. For ten points each:
        [10] Name this southwest African country with capital at Luanda. It is bordered by Namibia to
        the south, Zambia to the east, and the Democratic Republic of the Congo to the north.
        ANSWER: Angola
        [10] Angola shares a short border with the Republic of the Congo because it contains this tiny
        oil-producing province, separated from the rest of Angola by a small strip of foreign Congolese
        land.
        ANSWER: Cabinda
        [10] The province of Cabinda is classified as one of these regions in relation to Angola. An
        American example is the Kentucky Bend, and these regions are called enclaves if they are entirely
        surrounded by a single state.
        ANSWER: exclaves

(5)   The fourth quantum number pertains to this property. For ten points each:
        [10] Name this property that describes the angular momentum of a particle. The Pauli exclusion
        principle limits the number of particles with a half-integer value for this property that can occupy
        a single quantum state.
        ANSWER: spin
        [10] This experiment used a beam of silver atoms sent through an inhomogeneous magnetic field
        to show that particles have intrinsic quantized values of angular momentum and carry spin.
        ANSWER: Stern-Gerlach experiment
        [10] The Stern-Gerlach experiment was one of the first that allowed direct observation of this
        phenomenon, which allows particles such as electrons to simultaneously exist in all of their
        possible quantum states.
        ANSWER: quantum superposition

(6)   One founder of this philosophy considered the problem of a squirrel running around a tree while
        a man tries to catch it. For ten points each:
        [10] Identify this philosophy, referred to as "A New Name for an Old Way of Thinking", that
        advocated using practical success in order to judge ideas or beliefs.
        ANSWER: pragmatism or pragmatic
        [10] This instrumentalist philosopher's pragmatic influences are evident in his book *Democracy
        and Education.* Along with C. S. Peirce and William James, he is regarded as one of the founders
        of pragmatism.
        ANSWER: John Dewey
        [10] This American pragmatist taught Robert Brandom and questioned how the mind reflected
        the outside world in *Philosophy and the Mirror of Nature.*
        ANSWER: Richard Rorty

(7)   This artist used his mistress Camille Claudel as a model. For ten points each:
[10] Identify this sculptor who included works like *The Three Shades* and *The Thinker* in his *The Gates of Hell*.
ANSWER: François-Auguste-René <u>Rodin</u>
[10] This Rodin work depicts Saint Pierre and five other dejected figures heading to the gallows in order to save the titular city.
ANSWER: The <u>Burghers of Calais</u>
[10] Under the commission of the Society of Men of Letters of France, Rodin created a *Monument to [this figure]*, which was largely ridiculed for its grotesque, robed form.
ANSWER: Honoré de <u>Balzac</u>

(8)   These constructs come in parallel or series, and diagrams of them depict wires connecting their elements. For ten points each:
[10] Name these electronic networks that contain a closed loop that returns current. They also contain sources, which are depicted as a circle containing an arrow in diagrams.
ANSWER: <u>circuit</u>
[10] These two eponymous loop laws are used to analyze electrical circuits. The second one is also known as the Mesh Rule, and the first one is derived from the conservation of charge.
ANSWER: <u>Kirchhoff</u> loop laws
[10] Kirchhoff's Second Law states that this value for a closed loop must equal zero. That law is derived from Faraday's Law of Induction, which states that a time-varying magnetic field will produce this quantity, also known as an electromotive force.
ANSWER: <u>voltage</u>

(9)   Dirk Stroeve helps the protagonist, after which Dirk's wife, Blanche, runs off with him, though he has no interest in her except as a model. For ten points each:
[10] Identify this novel about Charles Strickland, which was based on the life of Paul Gauguin.
ANSWER: The <u>Moon and Sixpence</u>
[10] *The Moon and Sixpence* is a work by this author. He who wrote a novel about the club-footed orphan Philip Carey which ends with his engagement to the non-pregnant Sally Altheney, *Of Human Bondage*.
ANSWER: William Somerset <u>Maugham</u>
[10] Maugham was the inspiration for Kenneth Toomey, who appeared in this author's *Earthly Powers*. This author described Alex and his droogs in *A Clockwork Orange*.
ANSWER: Anthony <u>Burgess</u>

(10)   This battle included locations such as Pavlov's House, and it is commemorated by the Motherland Calls statue. For ten points each:
[10] Name this battle at a Russian city on the eastern front of World War II. The Soviets won this battle as part of Operation Uranus, but it sustained huge numbers of civilian casualties.
ANSWER: Battle of Stalingrad
[10] This general of the Red Army launched Operation Uranus and Operation Bagration. This four-time winner of the Hero of the Soviet Union Medal was defeated during Operation Mars.
ANSWER: Georgy Konstantinovich Zhukov
[10] Another battle in Russia during World War II was this nine-hundred day siege of a city. It featured the Road of Life supply route, and it caused around a million civilian deaths due to starvation.
ANSWER: Battle of Leningrad

(11)   Commutative examples of these structures are called abelian. For ten points each:
[10] Identify this type of algebraic structure consisting of a set that is closed under an associative binary operation, which has an identity and inverses for every element.
ANSWER: group
[10] One example of an abelian group is $\mathbb{Z}_n$ [READ: "Z sub n"], the integers under this type of arithmetic, sometimes called clock arithmetic. Its numbers are the remainders after dividing by n.
ANSWER: modular arithmetic (accept modulo n)
[10] An example of a nonabelian group is a dihedral group, which consists of reflections and these transformations of a regular polygon about its center. The identity element of the group is one of these transformations measuring zero degrees.
ANSWER: rotation

(12)   They come in repressible and inducible types. For ten points each:
[10] Name this functional unit of genetic control that coordinately controls the transcription of related genes by a single molecular switch. Typically, they also contain the appropriate promoter sequence.
ANSWER: operon
[10] An example of a repressible operon is one which controls the synthesis of this molecule. When this amino acid is present in cells, it acts as a corepressor to switch off transcription of the operon, in contrast to the lac operon.
ANSWER: tryptophan
[10] The lac operon was the first operon to be identified in this species of bacteria, one of the most widely studied. This gram-negative bacteria is frequently found in mammalian intestines.
ANSWER: E. coli (or Escherichia coli)

(13)   A federal scout in this story tells the protagonist that, should he manage to avoid a picket post and a sentinel, the title structure would burn like tinder. For ten points each:
[10] Identify this short story in which Peyton Farquhar imagines a miraculous escape in the seconds before he is hanged at the title location.
ANSWER: An Occurrence at Owl Creek Bridge
[10] *An Occurrence at Owl Creek Bridge* is a short story by this author who wrote *The Devil's Dictionary* and disappeared mysteriously after he went to Mexico.
ANSWER: Ambrose (Gwinett) Bierce
[10] Bierce's disappearance inspired this author's novel *The Old Gringo*. This Mexican author also wrote about the last days of the corrupt title politician in *The Death of Artemio Cruz*.
ANSWER: Carlos Fuentes Marcias

(14)   This work contains the *Ride of the Valkyries*. For ten points each:
[10] Identify this series that begins with three maidens at a river in the section *The Rhine Gold*. Alberich constructs the title object of this work, which ends with the *Twilight of the Gods*.
ANSWER: Ring Cycle or The Ring of the Nibelungs (or Der Ring des Nibelungen)
[10] This German composed the *Ring Cycle* in addition an opera about a cursed ship captain, *The Flying Dutchman*.
ANSWER: Richard Wagner
[10] In this other Wagner opera, the title singer is in love with Elizabeth and competes in a contest with Wolfram. This opera ends with the Pope's staff sprouting leaves signaling God forgiving the title character.
ANSWER: Tannhäuser and the Singers' Contest at Wartburg Castle

(15)   This country is home to the group that carried out the Lucanamarca massacre, the Maoist "Shining Path," and this country was home to the Moche and Chimu civilizations. For ten points each:
[10] Name this country whose independence was affirmed after Jose de Sucre won the Battle of Ayacucho. It was also home to the ruler Tupac Amaru of the Incan Empire and that empire's capital, Cusco.
ANSWER: Republic of Peru (accept República del Perú)
[10] The aforementioned Shining Path insurgency has weakened after the capture of this former leader in 1992. He was succeeded by Oscar Ramirez, and is currently being held at the Callao naval base.
ANSWER: Manuel Rubén Abimael Guzmán Reynoso (accept President Gonzalo)
[10] Guzmán was jailed by this former President of Peru, who fled to Japan and tried to resign by fax in 2000.
ANSWER: Alberto Fujimori

(16) Both the plagioclase and orthoclase forms of this mineral have two cleavage angles. For ten
      points each:
      [10] Name this mineral that occupies the continuous branch of Bowen's reaction series and has a
      value of 6 on the Mohs hardness scale. It is the most abundant mineral in the Earth's crust.
      ANSWER: feldspar
      [10] Plagioclase feldspar often produces the pink variety of this rock, produced from the slow
      cooling of felsic magma. It is often used for the manufacture of countertops.
      ANSWER: granite
      [10] The lunar highlands are made of this rock that is nearly entirely composed of plagioclase.
      Most of this rock on the moon was produced at the time of lunar formation, but it can also be
      found on Earth in Labrador and the Adirondacks.
      ANSWER: anorthosite

(17) His sisters are named by sticking pins in a Bible, giving them such names as Magdalene and
      First Corinthians. For ten points each:
      [10] Identify this character who was born as Robert Smith prepared to jump off the roof of
      Mercy Hospital. He learned that his great-grandfather flew back to Africa, and was nearly killed
      several times by Hagar and Guitar Bains.
      ANSWER: Milkman Dead (or Macon Dead III, prompt on partial answer)
      [10] Milkman Dead appears in this novel, which also features Ruth's complicated relationship
      with her father, Dr. Foster.
      ANSWER: Song of Solomon
      [10] *Song of Solomon* was a work by this African-American author, who also wrote about the
      return of Sethe's title daughter in *Beloved*.
      ANSWER: Toni Morrison (or Chloe Ardelia Wofford)

(18) Crossbows have left a giant mark on history. For ten points each:
      [10] Mercenaries from this city became famous for their skill with the crossbow during the
      Crusades. This polity was defeated by its rival Venice in the War of Chioggia, and it was ruled
      at times by the Fieschi and the Obertenghi.
      ANSWER: Republic of Genoa
      [10] French Crossbowmen were not very helpful in this 1415 battle on Saint Crispin's Day, which
      instead showed longbow dominance. It was a decisive victory for the British under Henry V
      during the Hundred Years' War.
      ANSWER: Battle of Agincourt
      [10] Partially derived from an early crossbow, the gastraphetes, this early Roman weapon fired
      large bolts and could be used as a siege weapon. It was so large that it had to be moved using
      horses, and a repeating version of it was known as the Polybolos.
      ANSWER: Ballista

(19)   This religion's texts include *Tablets of the Divine Plan* and *The Hidden Words*. For ten points each:

[10] Name this religion whose symbol is a nine-pointed star and which believes in gradual revelation through messengers including Krishna, Muhammad, and, more recently, the Bab and Baha'ullah.

ANSWER: Baha'i

[10] Baha'i is governed from the Universal House of Faith, located in the city of Haifa in this country. In Islam, Muhammad rode the Buraq to this country's city of Jerusalem on the Night Journey.

ANSWER: State of Israel

[10] To many Baha'i believers, this man is the first and last guardian of the faith. This author of *God Passes By* started the expansion project the Ten Year Crusade.

ANSWER: Shoghi Effendi

(20)   King Midas was not the only one with a magic touch. For ten points each:

[10] In one episode of *Family Guy*, Peter Griffin gains the ability to turn every person he touches into this comedian and actor, who voiced Genie in *Aladdin* and won an Academy Award for his performance in *Good Will Hunting*.

ANSWER: Robin Williams

[10] The line "He's the man/ The Man with the Midas Touch" appears in this James Bond film's title song, sung by Shirley Bassey. This film starring Sean Connery also includes the main villain's hat-throwing sidekick Oddjob.

ANSWER: Goldfinger

[10] This singer asks for "A man with a Midas touch to intoxicate [her]" in *Radar*. This singer of *Oops! I did it again* and *Toxic* also sang *Scream and Shout* with will.i.am [READ: "Will I am"].

ANSWER: Britney Spears

(21)   Outdated methods in this field include substitution ciphers and Caesar's cipher. For ten points each:

[10] Identify this field of mathematics which studies encryption and decryption of information. Paradigms in this field include symmetric-key and public-key.

ANSWER: cryptography

[10] This British mathematician, one of the first modern cryptographers, helped break the German Enigma code during World War II. He also names a type of theoretical computer that reads and writes on an infinite strip of tape.

ANSWER: Alan Mathison Turing

[10] One popular public-key cryptosystem is RSA, whose security relies on the difficulty of performing this operation on the key.

ANSWER: prime factoring integers or numbers (or prime factorizing integers or numbers; accept word forms; accept similar answers mentioning factor)