

**Minnesota Undergraduate Tournament 2015: My Torah Portion was an Archie Comic**  
**Questions by Rob Carson, Mike Cheyne, Andrew Hart, Gautam Kandlikar, Shan Kothari, Bernadette Spencer, Cody Voight, and special guest Ike Jose**  
**Packet 09: Tossups**

1. This battle ended a brief armistice formed after the Battle of the Great Plains, and the loser attempted to prevent the winner from repeating his strategy of targeting the center, which he had done at Illipa. It was fought after the losing side rejected a generous peace treaty that would only have allowed for a slight expansion of Numidia. This battle's losing commander had been recently recalled home, having been abroad fighting the (\*) Fabian strategy and winning the Battle of Cannae. At the beginning of it, the winning commander ordered his cavalry to blow loud horns to confuse the enemy's war animals. In this battle, Scipio Africanus' forces killed over 20,000 of Hannibal's men. For 10 points, name this battle that ended the Second Punic War.

ANSWER: Battle of Zama

2. This god's affair with Chryse produced the Lapith king Phlegyas. The namesake founders of four Thracian tribes, including Edonus and Biston, resulted from this god's affair with the muse Calliope, while two of his other sons led the Orchomenian contingent at Troy. This god's retinue included Alala, the Machai, his daughter Adrestia, and his lover Enyo. He was stopped from killing Heracles in revenge for that man's defeat of this god's son Cycnus. A daughter of this god was given a (\*) cursed necklace as a wedding gift from Hephaestus. In the *Iliad*, Athena aided Diomedes in wounding this god. Alectryon was turned into a rooster after failing to prevent the discovery of this god's affair with Aphrodite. For 10 points, name this father of Harmonia, Phobos, and Deimos, the Greek god of war.

ANSWER: Ares [or Mars until "Greek" is read]

3. Andre Mortreux reported that the catalyst molybdenum hexacarbonyl scrambled these interactions. On an IR spectrum, one of these interactions appears as a weak band from 2260-2100 inverse centimeters. A "zipper reaction" changes one of these interactions from internal to terminal. Hydrogenating across this interaction typically requires use of a Lindlar catalyst. An iron catalyst weakens one of these interactions in the (\*) Haber process. Sp-hybridized orbitals account for this interaction, which consists of two pi bonds and one sigma bond. An extremely strong example of these bonds exists between the atoms of molecular nitrogen. For 10 points, name this strong bond present in alkynes, represented by three lines on a Lewis diagram.

ANSWER: triple bond [accept triple once "bond" is read]

4. In this city, the protagonist of a novel gets a job in a factory that makes "O-Daddy, the condom of tomorrow" and works as the virgin-deflowering "Big Stingaree" before being beaten nearly to death by the legless Achilles Schmidt. In another novel, this city is where Walter Wade is dumped by Kate Cutrer, who joins the protagonist on a trip to Chicago. Dove Linkhorn moves from Texas to this city in Nelson Algren's *A Walk on the Wild Side*, while (\*) Binx Bolling leaves it in Walker Percy's *The Moviegoer*. The muscatel-loving Irene falls in love with Claude Robichaux in a novel set in this city whose protagonist corresponds with Myrna Minkoff, works at the Levy Pants factory, adores Boethius, and is named Ignatius J. Reilly. For 10 points, John Kennedy Toole's *A Confederacy of Dunces* is set in what Gulf Coast city?

ANSWER: New Orleans, Louisiana

5. One artist from this present-day country included formalist photographs of objects like shoe irons and blast furnaces in his book *The World is Beautiful*. A very large photograph from this present-day country depicting a river flowing between two green fields under an overcast sky sold at Christie's for \$4.3 million in 2011. A performance artist in this country planted 7000 oaks and locked himself in a room with a coyote. This home of Andreas Gursky and (\*) Joseph Beuys has a Norman Foster-designed glass dome on its parliament building. Albert Renger-Patzsch and George Grosz belonged to this country's New Objectivity movement. Architects from this country designed the White City of Tel Aviv in the style of a school in this country founded by Walter Gropius, the Bauhaus. For 10 points, name this country home to the Reichstag.

ANSWER: Federal Republic of Germany [or Bundesrepublik Deutschland]

6. A character with this occupation who is obsessed with the idea that he is “destined for glory” marries the owner of the boutique Rex. That character with this occupation showers in a public drinking fountain, which is one of the eighteen “crimes” that causes his adopted son’s gang to kill him. Joss Merlyn leads a group who engineer the deaths of these people in order to steal from them in Daphne du Maurier’s *Jamaica Inn*. Richard Henry (\*) Dana wrote a memoir about spending two years in this occupation. The physician Maturin befriends a man with this job named Aubrey in a series of novels by Patrick O’Brian that begins with *Master and Commander*. For 10 points, identify this occupation of Ryuji Tsukazaki, who “fell from grace with the sea” in a Yukio Mishima novel, and of Stubb, Starbuck, and Ishmael from *Moby-Dick*.

ANSWER: sailors [or obvious synonyms like mariners or seamen; or members of the navy; or naval cadets; or even specific stuff like ship captains or second mates or whalers]

7. A member of this house was said to speak like a "recent candidate for Confirmation" by Baron Altrincham. Another ruler from it was accused of being a bigamist by Edward Mylius. The founder of this house claimed to pray that his "eldest son will never marry," so his other son could take the throne. In a cartoon, that founder sweeps away various (\*) German crowns. A later member hired Dr. Lionel Logue, who had him read various tongue twisters in preparing for speeches. Another member of this house fell in love with divorced American socialite Wallis Simpson. This English house changed its name from Saxe-Coburg during the reign of George V, whose son, Edward VIII abdicated in 1936. For 10 points, name this royal house of Elizabeth II.

ANSWER: House of Windsor [accept House of Saxe-Coburg and Gotha until mentioned]

8. The “immutability” of this concept is considered in “The Days of the Niblungs”, which along with “Definitions for Lonely Atoms” appears in the first volume of a 2003 book on this subject. The “hydraulic theory” of this concept is rejected in a book that includes the “escalator of reason” among the five causes for this concept’s decline. Its virtues are discussed in a book that introduces the idea of the social myth and advocates the general strike. William Vollman’s (\*) *Rising Up and Rising Down* and Stephen Pinker’s *The Better Angels of Our Nature* are both surveys of this subject, which was the subject of some “reflections” by George Sorel. Hannah Arendt regarded it as the opposite of, rather than the extreme extension of, power, while Max Weber claimed that a state has a monopoly on the legitimate use of it. For 10 points, identify this concept that can be defined as the intentional use of physical force.

ANSWER: violence [or physical force until mentioned]

9. The concentration of a type of this element in the ocean is determined using high-temperature catalytic oxidation, or HTCO. The reference standard for this element's isotopes is the Vienna Pee Dee Belemnite. Sapropel sediments have an unusually high concentration of this element. Observing fizz after dripping a dilute mixture of hydrochloric acid on a rock indicates that it contains a class of minerals named for having one atom of this element. The concentration of an ion with one atom of this element is decreased by ocean acidification, making it harder for the (\*) calcite-using foraminifera to form shells. Gas exchange at the ocean-atmosphere interface sequesters a lot of the inorganic form of this element. A radioactive isotope of this element has a half life of about 5,700 years. For 10 points, isotopic geochemists often study the ratio of the 13 and 14 amu isotopes of what element used for dating?

ANSWER: carbon [or C]

10. This man's knocks excite a servant named Rhoda, who forgets to open the door for him. In a famous outdoor speech, he noted it was "only the third hour of the day" in disputing accusations that people were drunk. This man was chastised after cutting the servant Malchus' ear off with his sword, and he once wept bitterly shortly after being recognized because of his (\*) Galilean accent. He reportedly was crucified upside down to avoid comparisons to his master. This person was asked three times if he loved Jesus, a reference to his denying of Christ three times on the night Jesus was betrayed. He was called the "rock of my church" by Jesus. For 10 points, name this disciple of Jesus who is traditionally considered the first pope.

ANSWER: Simon Peter [prompt on Simon]

11. One composer from this country used pitch multiplication in a piece whose sections include “The Furious Craftsmanship.” A composer born in this country wrote an electronic piece for the hundreds of speakers in the Philips Pavilion, and included high and low sirens in a piece for thirteen percussionists, *Ionisation*. Recurring “statue,” “flower, and “love” themes are featured in a (\*) ten-movement piece from this country for orchestra, piano, and Ondes Martenot. The composer of that piece, the *Turangalila-Symphonie*, wrote a work for clarinet, violin, cello, and piano in a POW camp called the *Quartet for the End of Time*. Another composer from here included movements like “Play of the Waves” in *La Mer*. For 10 points, name this country home to Pierre Boulez, Olivier Messiaen, and Claude Debussy.

ANSWER: France

12. One character in this book, who claims to be the Princess of Palestrina and the daughter of Pope Urban X, was kidnapped by pirates, taken to Morocco, ineffectually raped by an Italian eunuch, and taken to Azov by her Muslim captors, who eventually ate one of her buttocks during a siege. Another character in this book, who is surprised that a servant entrusted with a great sum of gold does not steal, is a pessimistic philosopher named (\*) Martin. This novel opens in the castle of Baron Thunder-ten-tronckh, where the title character sees a professor of “metaphysico- theologo-cosmolo-nigology” seducing a maid named Pacquette. The title character of this book concludes that “we must cultivate our garden” at its end, surrounded by his now-ugly love interest Cunegonde and his faithful servant Cacambo. For 10 points, name this comic novel by Voltaire.

ANSWER: Candide

13. A major scandal in this colonial power’s possessions occurred when a half-Japanese, 12-years-old girl had a tryst with a 15-year-old boy, causing the leader of an organization from this power to put the boy to death. In 1639, this country set up a trading post at Hirado, and two years later did the same at Deshima; for the next 215 years, this was the only European country allowed to trade with (\*) Japan. This country’s East India Company, known as the VOC, was led by a man who founded the city of Batavia on the site of what is now Jakarta, Indonesia. This country’s VOC also employed Abel Tasman, who called the Australian island now named for him “Van Diemen’s Land” after another colonialist from this country. For 10 points, name this country whose former colonies, including Aruba and Suriname, still have many Dutch speakers.

ANSWER: The Netherlands [or Holland]

14. This man played a Southern character that leaves with his hemorrhoid doughnut after bombing a NASA interview due to eating one of the interviewer's potato chips. This actor basically reprised that role in playing Judge Marshall Boudreaux, the host of the Louisiana flavored reality show *Maine Justice*. In two films, he played accountant Kurt Buckman who detests his Colin Farrell played boss and joins his two friends in consulting with "murder consultant" Dean "Motherfucker" Jones. This boyfriend of Olivia Wilde has played such characters in sketches as one of the two A-Holes, Joe Biden, and Mitt Romney. For 10 points, name this former *Saturday Night Live* actor who appeared with Charlie Day and Jason Bateman in the *Horrible Bosses* films.

ANSWER: Jason Sudeikis

15. Wolfgang Paul invented an ion trap with this many poles, which is often used in mass spec. According to the zero-component lemma, if a vector with this many components has one of its components equal to zero given certain conditions, all are equal to zero. The metric signature is given as this many minus or plus signs. An example of a vector with this many components is the displacement vector between two events. A vector calculus described by this number is used in (\*) special relativity, as one usually formulates it in terms of the metric space named for Minkowski that has this number of dimensions. For 10 points, name this number of dimensions of spacetime, as it includes time as a dimension.

ANSWER: four

16. This man painted an inverted clock falling out of the sky, a man being hanged, and another man stabbing a child, in a gouache painting in which Christ yells from the cross entitled *Apocalypse in Lilac, Capriccio*. He traveled to the Holy Land after Ambroise Vollard commissioned him to illustrate the Old Testament. He depicted scenes from 14 operas on a removable frame over Jules Eugène Lenepveu's original ceiling for the auditorium of the (\*) Palais Garnier, the main opera house in Paris. This artist, many of whose paintings were inspired by his hometown of Vitebsk, painted a work showing tumbling houses and a burning synagogue surrounding Christ on the cross. For 10 points, name this Belarusian-born painter of *White Crucifixion*, who showed a green-faced man staring at a sheep in his painting *I and the Village*.

ANSWER: Marc Chagall [or Marc Zakharovich Chagall; or Moishe Shagal]

17. In an experiment lasting more than 200 years, William Beal buried twenty bottles filled with these structures, which are produced by the clade Spermatophyta. Many of them contain parts called elaiosomes that ants feed to their larvae, which promotes myrmecochory. One part of these structures is surrounded by the aleurone layer, in which gibberellins stimulate alpha-amylase secretion. In most species, these structures form from a (\*) double-fertilization which involves the fusion of sperm with two polar nuclei. In angiosperms, these structures usually have a nutritious triploid part, the endosperm, and another part that may contain one or two cotyledons. They are surrounded by a coat which is broken by the radicle during germination. For 10 points, name these embryonic structures which higher plants use to reproduce.

ANSWER: seeds

18. This author suggested the name of the Gaia hypothesis to his close friend James Lovelock. A group of characters in a novel by this author are capable of telepathically sharing "pictures" and worship a huge ice block called Oa. Another of this author's characters obsessively repeats his address, "The Vicarage, Harcourt St. Anthony, Hants", as well as his name, Percival Wemys Madison. In one of this man's novels, Vivani adopts the New One after Fa's disappearance causes Lok to die in despair. In addition to that book about a dying (\*) Neanderthal tribe, he wrote a novel whose protagonist weeps for "the end of innocence" in the final scene. The twins Sam and Eric are tortured by Roger, who drops a boulder that breaks the conch and kills Piggy, in this man's first novel. For 10 points, name this author of *The Inheritors* and *The Lord of the Flies*.

ANSWER: William Golding [or William Gerald Golding]

19. This man came to national attention after a speech at Ripon College when he noted Scandinavian countries do not use safeguards like the Fifth Amendment. Scott Armstrong and Bob Woodward painted this man as weak and not respected by his colleagues in the book *The Brethren*. He and a younger colleague were dubbed the "Minnesota Twins," but that man, Harry Blackmun, eventually broke away from this man's conservatism to write an opinion limiting state regulation of (\*) abortion to the third trimester. The first Supreme Court appointment by Richard Nixon, this man wrote the majority opinion in *U.S. v. Nixon* and a concurring opinion in *Roe v. Wade*, a case decided during his time leading the Court. For 10 points, name this conservative who succeeded Earl Warren as Chief Justice.

ANSWER: Warren Earl Burger

20. In *Narration and Knowledge*, Arthur Danto argues that this field goes beyond constructing Ideal Chronicles. Carl Hempel argued that contrary to appearances, explanations in this discipline must involve general laws. One work on the philosophy of this field divided it into original, reflective, and philosophical types. It was described as the study of mind in a book on "The Idea of" it by R. G. Collingwood. Herbert (\*) Butterfield attacked "Whig interpretations" in this discipline. Hegel characterized this as the process through which the Spirit comes to recognize its own freedom and gave "Lectures on the Philosophy of" it. Alexandre Kojève interpreted Hegel to theorize the "end of" this, which Francis Fukuyama used to argue for the inevitability of liberal democracy. For 10 points, name this discipline practiced by Arnold Toynbee that focuses on the past.

ANSWER: history

TB. This man was shot at by James Hadfield, who was told by Bannister Truelock that doing so would result in the Messiah's Second Coming. James Gillray made a cartoon showing him holding a Frenchman in his hand. This ruler's son would introduce the Pains and Penalties Bill as a way to control his wife, Caroline. He dismissed the Ministry of All the Talents. During this man's reign, the words "King Mob" were scrawled by rioters on Newgate Prison during the Gordon Riots, which embarrassed Prime Minister Lord North. Late in his reign, he possibly developed porphyria, which would explain his mentally ill behavior. For 10 points, name this British king at the time of the Revolutionary War.

ANSWER: **George III** [prompt on "**George**"]

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**Packet 09: Bonuses**

1. Among angiosperms, this procedure is often done with a combination of the *rbcL* and *matK* loci, while it often uses ITS in fungi. For 10 points each:

[10] Name this method in taxonomy that uses short genetic markers to determine the species of a specimen through reference to previous sequences. It is often used to delimit cryptic species or identify degraded specimens.

ANSWER: **DNA barcoding** [accept word forms; prompt on partial answer]

[10] To amplify DNA before barcoding, you usually have to carry out this procedure with denaturation, annealing, and extension steps. It uses an enzyme isolated from *Thermus aquaticus*.

ANSWER: **polymerase chain reaction** [or **PCR**]

[10] Barcoding in animals is often done with the cytochrome oxidase I gene from this organelle's genome. This organelle's inner membrane is the site of the electron transport chain.

ANSWER: **mitochondria** [or **mitochondrion**]

2. This book accuses a culture of "Panglossism" for the way they deny anything that conflicts with the moral codes of the Calvinists, the Founders, or the Victorians. For 10 points each:

[10] Identify this collection of nine essays that begins with an analysis of *pachucos* and considers the roles of silence, death, and the *fiesta* in establishing identity.

ANSWER: **The Labyrinth of Solitude** [or **El Laberinto de la Soledad**]

[10] *The Labyrinth of Solitude*, which also includes the essay "The Day of the Dead", is an examination of this Latin American country, the home of the book's author, Octavio Paz.

ANSWER: **Mexico** [or the United **Mexican** States; or Estados Unidos **Mexicanos**]

[10] An Enrique Krauze essay about this man published in Paz's magazine *Vuelta* sparked a feud between him and Paz. This man's novels include *Terra Nostra* and one in which the title writer meets Harriet Winslow and the revolutionary General Arroyo.

ANSWER: Carlos **Fuentes** [or Carlos **Fuentes** Macias]

3. This opera's second act begins with a chorus about Hagar inspired by Bach's passions, after which the title character exchanges accusations with a terrorist nicknamed "Rambo." For 10 points each:

[10] Name this opera about the hijacking of the *Achille Lauro* by the Palestinian Liberation Front. Its performances are often protested by wealthy Zionists.

ANSWER: **The Death of Klinghoffer**

[10] This composer of *The Death of Klinghoffer* included the aria "I Am the Wife of Mao Zedong" in *Nixon in China*. He won a Pulitzer Prize for *On the Transmigration of Souls*, which commemorated the September 11 attacks.

ANSWER: John Coolidge **Adams**

[10] This Philip Glass opera, the first of Glass's Portrait Trilogy, contains four acts separated by "knee plays." A Christopher Knowles text is read over bass clarinet and soprano saxophone in its section "I Feel the Earth Move."

ANSWER: **Einstein on the Beach**

4. This man was the Chairman of the State Factory Investigating Committee after the Triangle Shirtwaist Factory fire. For 10 points each:

[10] Name this New York Senator who is best known for being the namesake of the 1935 National Labor Relations Act, which created the National Labor Relations Board and guaranteed the right of workers to form unions.

ANSWER: Robert Ferdinand **Wagner**

[10] The Wagner Act was criticized by this union that was founded by Samuel Gompers. Consisting of craft unions, it eventually merged with its one-time rival, the CIO.

ANSWER: **AFL** [or **American Federation of Labor**]

[10] The Wagner Act was found constitutional in a Supreme Court case involving a corporation in this industry named for Jones & Laughlin. President Truman tried to seize this industry in 1952.

ANSWER: **steel**

5. The next instance of one version of this day will last from sunset on October 13, 2015 to sunset the next day. For 10 points each:

[10] Identify this holiday that, in Islam, takes place on the first day of Muharram each year. In Judaism, this day is known as Rosh Hashanah.

ANSWER: Islamic **New Year** [accept but DO NOT REVEAL “**Ras as-Sanah** al-Hijriyah”]

[10] The full name of the Islamic lunar New Year references this term for Muhammad’s 622 CE journey from Mecca to Medina.

ANSWER: the **Hijra** [or **Hijrat**; or **Hegira**; do not accept “Hajj”]

[10] This holiday takes place on the tenth of Muharram. On it, Sunni Muslims commemorate Musa’s fast after the freeing of the Israelites, while Shia Muslims mourn the martyrdom of Muhammad’s grandson Husayn.

ANSWER: the Day of **Ashura**

6. The protagonist of this novel receives an invitation to an “Anarchist Evening” at a place described as being “For Madmen Only, Price of Admission Your Mind”. For 10 points each:

[10] Name this novel whose protagonist is brought to the Magic Theatre by a jazz saxophonist named Pablo.

ANSWER: **Steppenwolf**

[10] *Steppenwolf* was written by this German author of *The Glass Bead Game* and *Siddhartha*.

ANSWER: Hermann **Hesse**

[10] A number of Hesse’s characters, including Vasudeva from *Siddhartha* and Goldmund from *Narcissus and Goldmund*, join the narrator in a group searching for the “ultimate Truth” in this penultimate Hesse novella.

ANSWER: **Journey to the East** [or *Die Morgenlandfahrt*]

7. This song’s second verse lists things like “cherry lips, crystal skies” and “stolen kisses, pretty lies” and ends with the line “Darling I’m a nightmare dressed like a daydream”. For 10 points each:

[10] Name this 2014 song whose singer claims to have a “long list of ex-lovers” who’ll “tell you I’m insane”.

ANSWER: “**Blank Space**”

[10] “Blank Space” was the second single from *1989*, the fifth album by this singer, whose recent songs like “Shake It Off” and “We Are Never Ever Getting Back Together” are way better than her earlier pop-country releases.

ANSWER: Taylor **Swift** [or Taylor Alison **Swift**; or **T-Swizzle**]

[10] Swift’s 2012 song “Treacherous” was co-written by Dan Wilson, whose fame as a producer has probably eclipsed his fame as the lead singer of this 90s band, whose songs include “Secret Smile” and “Closing Time”.

ANSWER: **Semisonic**

8. This philosophical tradition was promoted by statesmen such as Li Si and Shang Yang, and it is based around the concepts of *fa*, *shu*, and *shi*. For 10 points each:

[10] Name this state philosophy of the Qin dynasty. The *Han Feizi* is a work from this school that claims that people must be punished because they are too possessed by material interests to feel shame and blames the “five vermin” for weakening the state.

ANSWER: **Legalism** [or **fa jia**; accept word forms]

[10] As chancellor under Qin Shi Huangdi, Li Si allegedly prompted the burial alive of 460 scholars mostly belonging to this school, whose core teachings, like filial piety, are collected in the *Analects*.

ANSWER: **Confucianism** [or **Ruism**; accept word forms]

[10] Another Confucian, Mencius, opposed the ethics of Yang Zhang and this philosopher. This man claimed that one must care for all people impartially and that an action’s worth depends on its effects on the state, and his followers compiled the *Canons* and the *Triads*.

ANSWER: **Mo** Zi [or **Mo** Tzu; or **Mo** Di; or **Micius**]

9. This method works for equations of the form  $y'' + P(x)y' + Q(x)y = 0$  where  $P$  or  $Q$  are not analytic at the point of expansion, which should be a singular point. For 10 points each:

[10] Name this method used to find power series to unknown solutions of many second-order differential equations relevant in physics.

ANSWER: method of **Frobenius**

[10] The method of Frobenius is an alternative to this power series approach to finding the solution to a differential equation. This power series is calculated by taking the  $n$ -th derivative of a function divided by the  $n$ -th factorial times the factor  $x - a$ ; when  $a$  equals zero, it's called a Maclaurin series.

ANSWER: **Taylor** series

[10] An important test when solving second-order ODEs is whether or not the solutions have this relation to each other. In linear algebra, a set of vectors has this property if no vector in the set can be written as a linear combination of the others.

ANSWER: **linear independence**

10. Thomas Cromwell said if this woman were male, "she could have defied all the heroes of History." For 10 points each:

[10] Name this woman, the mother of Mary I. The annulment of her marriage to her second husband was secured thanks to the efforts of Thomas Cranmer.

ANSWER: **Catherine of Aragon** [prompt on **Catherine**]

[10] Catherine of Aragon was the first wife of this English monarch, who was married to six women, including Anne Boleyn.

ANSWER: **Henry VIII**

[10] Both Catherine and Henry were present at this June 1520 meeting between Henry and French monarch Francis I. This meeting was set up by the soon to be disgraced Cardinal Wolsey.

ANSWER: The **Field of the Cloth of Gold**

11. A device of this type can be constructed using two styrofoam cups nested within each other. For 10 points each:

[10] Name these laboratory devices used to measure the heat produced in chemical reactions, typically by gauging the enthalpy change per mole of a substance.

ANSWER: **calorimeters**

[10] In this type of calorimeter, consisting of an inner container in which the reaction occurs and an outer container filled with water, the volume is kept constant, and thus the inner vessel must be able to withstand very high pressure during the reaction.

ANSWER: **bomb** calorimeters

[10] Calvet-type calorimeters are calibrated using this effect, in which passing an electric current through a conductor produces heat in an amount directly proportional to the current squared, the resistance, and the time.

ANSWER: **Joule** heating or effect [accept **Joule-Lenz** law or **Joule's first law** or **ohmic** heating; prompt on "resistive (heating)"]

12. This conflict featured tanks breaking through defenses at the Battle of Summa. For 10 points each:

[10] Name this conflict that lasted about three months and featured invaders trying to break through the Mannerheim Line. Defenders threw glass bottles filled with flammable liquids at opposing tanks.

ANSWER: the **Winter** War [or **Talvisota**; or **Vinterkriget**; or **Zimnyaya voyna**]

[10] The Winter War was a victory for the Soviet Union over this Nordic country.

ANSWER: Republic of **Finland** [or **Suomi**]

[10] Simo Hayha, a Finnish sniper who killed over 500 Russians during the war, was given this two word nickname by the Soviets.

ANSWER: **White Death** [or **Belava Smert**]



13. The shattered remains of several axes, stakes, and hammers litter the bottom foreground of this painting, while a turbaned man in a green robe stands next to the title person and holds up another broken hammer. For 10 points each:

[10] Name this 1548 painting in which St. Mark swoops dramatically out of the sky in order to protect the nude central figure from being martyred by the onlooking crowd.

ANSWER: The *Miracle of the Slave* [prompt on “The *Miracle of St. Mark*”]

[10] *The Miracle of the Slave* was part of a series of paintings of St. Mark created by this Venetian Mannerist, whose late works included a famous diagonally-oriented depiction of *The Last Supper*.

ANSWER: Tintoretto [or Jacopo Comin; or Jacopo Robusti]

[10] Another pink-robed man swooping down from the sky appears in this Tintoretto painting, though this time his goal is to pull the infant Heracles away from the breast of Hera.

ANSWER: The *Origin of the Milky Way*

14. This author was given a sinecure at the New York Customs Office by Theodore Roosevelt, whose son Kermit recommended this man’s collection *Children of the Night*. For 10 points each:

[10] Name this American poet who set many of his poems in the fictional Tilbury Town. He wrote about a “clean favored, and imperially slim” gentleman who puts “a bullet through his head” in “Richard Cory”.

ANSWER: Edwin Arlington Robinson

[10] The title character of this Robinson poem “grew lean while he assailed the seasons”, cursing the commonplace and fantasizing about being a Medici. The poem’s speaker concludes that he was “born too late”.

ANSWER: “Miniver Cheevy”

[10] In this Robinson poem, the title character chooses to quaff a glass of bitter wormwood and offer a glass of wine to the narrator, who wonders when he “shall be / as happy as” the title character is.

ANSWER: “Cliff Klingenhagen”

15. This composer used a set of variations on his song “Die Forelle” as the fourth movement of his *Trout Quintet*. For 10 points each:

[10] Name this Austrian composer who only completed the first two movements of his *Unfinished Symphony*. He included songs like “Ständchen” and “Der Doppelgänger” in his collection *Schwanengesang*.

ANSWER: Franz Peter Schubert

[10] Schubert used text from Goethe’s *Faust* in this soprano lied in D minor, which has a constant sixteenth-note accompaniment in the right hand that only ceases at the words “und ach, sein kuss!”

ANSWER: Gretchen at the Spinning Wheel [or Gretchen am Spinnrade]

[10] Besides Schubert, another great composer of song cycles was this Russian who wrote *Sunless* and *Songs and Dances of Death*. Another of his pieces has multiple Promenade sections in 5/4 and 6/4.

ANSWER: Modest Petrovich Mussorgsky

16. This man invented the stopwatch time study of work efficiency, which Frank Gilbreth later developed into the time and motion study. For 10 points each:

[10] Name this thinker whose work at Midvale Steel Works and Bethlehem Steel led to his creation of the field of “scientific management”.

ANSWER: Frederick Winslow Taylor

[10] Taylor’s scientific management is sometimes seen as an extreme application of the division of labor, which was explained through the metaphor of a pin factory in the opening chapter of this Adam Smith book.

ANSWER: The *Wealth of Nations* [or An *Inquiry into the Nature and Causes of the Wealth of Nations*]

[10] Taylor’s work inspired management theorist Peter Drucker, whose work is especially popular in this country, the origin of just-in-time production. An automotive manufacturer in this country invented a style of “lean management” called “TPS”.

ANSWER: Japan [or Nihon-koku; or Nippon-koku]

17. This deity particularly enjoys a type of dumplings called *modak*, which are offered to him during his namesake festival. For 10 points each:

[10] Identify this “remover of obstacles”, whose decapitation by his father Shiva resulted in his original head being replaced with that of an elephant.

ANSWER: **Ganesh** [or **Ganapati**; or **Vinayaka**]

[10] Various sources claim that this god of war is alternately the younger or older brother of Ganesh, who cleverly beats this god in a race around the world by instead circling his parents.

ANSWER: **Kartikeya** [or **Skanda**; or **Murugan**]

[10] One of the versions of Ganesh from the Ganesha Purana shows him wearing this serpent king around his neck. Earlier, this naga volunteered to be used as the rope wrapped around Mount Mandara to churn the ocean of milk.

ANSWER: **Vasuki**

18. This country carried out an action sometimes known as Operation Jonathan. For 10 points each:

[10] Name this country which carried out Operation Thunderbolt at the Entebbe Airport in 1976 to retrieve over a hundred hostages.

ANSWER: **Israel**

[10] The raid at Entebbe occurred in this African country led by Idi Amin. This country is the site of a civil war fought against the Lord's Resistance Army.

ANSWER: Republic of **Uganda**

[10] Idi Amin took power by overthrowing this socialist President of Uganda. He later gained power again in 1980 in a term that featured numerous deaths in the Ugandan Bush War.

ANSWER: (Apolo) Milton **Obote**

19. Certainly, the best named example of these graphics is the penguin diagram, which depicts the decay of a bottom quark to a strange quark. For 10 points each:

[10] Name these diagrams from particle physics that depict the interaction of subatomic particles with lines and squiggles.

ANSWER: **Feynman** diagram

[10] On a Feynman diagram, this interaction would be depicted as a solid line meeting a broken line at a solid line that then splits into a solid line and broken line. In this interaction, the scattering of a photon off an electron decreases the energy of the photon.

ANSWER: **Compton** scattering [or **Compton** effect]

[10] Accretion discs around these astronomical objects can emit photons in the X-ray spectrum as a result of inverse Compton scattering. Not even light, or Chris Ray, can escape these objects once crossing their event horizon.

ANSWER: **black holes**

20. One of the only two appearances of the word “poop” in Shakespeare occurs during this character’s description of a barge “like a burnish’d throne” that carried a woman who “beggar’d all description”. For 10 points each:

[10] Name this character who dies of a broken heart after learning that his belongings had been sent to him, even though he had recently defected to the forces of Octavius Caesar.

ANSWER: Domitius **Enobarbus** [or Gnaeus Domitius **Ahenobarbus**]

[10] Enobarbus is the lieutenant of this character, whose love for Cleopatra is the subject of a Shakespeare play. In another, this man delivers a famous funeral oration for Julius Caesar.

ANSWER: **Mark Antony** [accept either underlined portion, or either underlined portion of **Marcus Antonius**]

[10] While talking to Agrippa and Maecenas, Enobarbus asserts that Antony can never leave Cleopatra, because “age cannot wither her, nor custom stale” this two-word quality.

ANSWER: her **infinite variety**

Extra. A statement of the weak form of this property is that inertial mass and gravitational mass occur in the same proportion for all particles. For 10 points each:

[10] Name this principle whose strong form states that physical experiments will give the same result in all locally inertial frames.

ANSWER: **equivalence** principle

[10] An interesting consequence of the equivalence principle is that gravitational fields bend light, a phenomenon that is responsible for the four copies of this type of object that appear as Einstein's cross. These extremely luminous and distant objects are likely powered by black holes and emit radio waves.

ANSWER: **quasars**

[10] Another consequence of the equivalence principle is that light traveling down a gravitational field will undergo this type of Doppler shift, which is contrasted with redshift.

ANSWER: **blueshift**