



Question #1: Literature – Mythology

10 points

During **Ragnarök** [RAG-nuh-rawk], Líf and **Lifthrasir** [lif-THRAH-sur] will hide among several of these objects belonging to **Hodmirir** [“hoed-mirror”]. To obtain the runes, Odin hung himself from one of these objects for nine days and nine nights. When Buddha was ready to die, Ananda prepared a place for him to do so between two of these objects. Bodhi Day celebrates Buddha sitting under one of these objects while attaining enlightenment. The middle of **Asgard** [AS-gahrd] contains one of these objects called **Yggdrasil** [IG-druh-sil]. Name these objects, one of which represents the knowledge of good and evil in the Garden of Eden.

trees [accept more specific answers; prompt on **plants**]

Question #2: Science – Biology

10 points

The **sartorius** [sar-TOR-ee-uss] muscle forms an anatomical “triangle” named for its proximity to this structure. The greater and lesser **trochanters** [tro-KAN-turz] are found in the head of this structure, which articulates with the **acetabulum** [ass-it-AB-yoo-lum]. The head of this bone is replaced during a hip replacement. This bone is directly superior to the meniscus, which separates it from the tibia. Name this longest bone in the human body, which comprises the thigh.

femur [prompt on **thigh** bone before the end]



Question #3: Social Studies – U.S. History

10 points

<p>After David John Lewis introduced a bill to create this program in the House of Representatives, Robert Doughton — the chair of the Committee on Ways and Means — submitted the same bill and gave his copy a better number. While creating this program, those bills set aside million of dollars per year to help states support blind people, dependent children, and maternal and child health services. This is the older of the two programs impacted by the Federal Insurance Contributions Act. The agency in charge of carrying out this program keeps track of people using nine-digit numbers. Name this program that gives money to retired Americans.</p>	<p><u>Social Security</u></p>
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Question #4: Miscellaneous – Popular Culture

10 points

<p>Following Sacheen [sah-SHEEN] Littlefeather’s appearance at this event, proxies were banned from attending on behalf of winners. Protests also erupted in response to Elia Kazan’s [EL-ee-uh kuh-ZAHN’z] appearance at this event in 1999. In 1940, Hattie McDaniel became the first African-American to win an award at this event. The two most recent iterations of this event were criticized for having zero people of color up for the 20 major awards, and inspired a Twitter campaign calling it “So White”. Name this annual event honoring films and people involved in making them.</p>	<p><u>Academy Awards</u> or the <u>Oscars</u></p>
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Question #5: Literature – British Literature

10 points

<p>Five of this poem’s six stanzas end with a question, but its fourth stanza ends with the exclamation “Dare its deadly terrors clasp!”. The speaker of this poem asks “what the hammer, what the chain, in what furnace was thy brain?”. This poem describes stars “throwing down their spears” and “watering heaven with their tears”. Its final two words are “fearful symmetry [SIM-uh-try]”. In the penultimate stanza, the narrator asks the title creature “Did he who made the lamb make thee?”. Name this poem about a creature “burning bright, in the forests of the night”, by William Blake.</p>	<p>“The Tyger” [accept Tyger! Tyger!]</p>
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Question #6: Science – Astronomy

10 points

<p>This adjective describes the lines in an absorption spectrum, compared to the spectrum. Before the development of relativity theory and the discovery of black holes, this adjective was used to describe theoretical stars whose escape velocity was greater than the speed of light. This adjective describes matter that does not emit or interact with electromagnetic radiation, as well as a type of energy that explains why the expansion rate of the universe is increasing. Give this adjective used to describe most of the matter and energy in the universe, an antonym of “light”.</p>	<p>dark [accept darker]</p>
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Question #7: Mathematics – Probability

10 points per part

If two probability events have this property and are also exhaustive, they add up to 1.		
1	Name this property describing two events that cannot both happen at once.	<u>mutually exclusive</u> or <u>mutual exclusivity</u> or <u>disjointness</u> [prompt on <u>exclusive</u>]
2	Suppose the probability of event A is 0.4, and the probability of event B is 0.3. If A and B are mutually exclusive, then find the probability that either A or B occurs.	<u>0.7</u> [or <u>7/10</u> or <u>70%</u>]
3	Suppose instead that the probability of A is 0.4, the probability of B is 0.3, and the probability of <i>both</i> A and B is 0.2. In that case, what is the probability that either A or B occurs?	<u>0.5</u> [or <u>1/2</u> or <u>50%</u>]

Question #8: Mathematics – Probability

10 points per part

This operation gives the number of ways that k objects can be selected from a set of n objects, if order does not matter.		
1	Name this operation that is contrasted with permutation.	<u>binomial combination</u> or binomial <u>choose</u> function [accept any underlined word]
2	How many ways are there to choose 2 items from a set of 6 items, if order does not matter? Simplify your answer so that it's just an integer.	<u>15</u> ways
3	If there is a set of 3 girls and 3 boys, and two people are selected at random, find the probability that both people selected are girls.	<u>1/5</u> or <u>0.2</u> or <u>20%</u>



Question #9: Literature – World Literature

10 points per part

For killing the son of Ezuelo [EH-zoo-AY-loh], the protagonist of this novel is banished from Umuofia [oo-moo-oh-FEE-uh].		
1	Name this novel about a yam farmer. Its title comes from a line in “The Second Coming”.	<i>Things Fall Apart</i>
2	This Nigerian novelist wrote <i>Things Fall Apart</i> , as well as its sequel, <i>No Longer at Ease</i> .	Chinua <u>Achebe</u> [CHIN-wah ah-CHAY-bay] [or Albert Chinualumogu <u>Achebe</u>]
3	In his essay “An Image of Africa”, Chinua Achebe referred to this author of <i>Heart of Darkness</i> as a “thoroughgoing racist”.	Joseph <u>Conrad</u> [or Józef Teodor Konrad <u>Korzeniowski</u>]

Question #10: Literature – World Literature

10 points per part

This former jail guard from Toulon [too-lawN] tries but fails to infiltrate the Friends of the ABC.		
1	Name this character. Following the execution of Jean Prouvaire [zhahn proo-vair], Enjolras [en-ZHOHL-rahss] calls for his execution, but this character is spared by his rival.	Inspector <u>Javert</u> [zhah-vair]
2	Inspector Javert pursues the former criminal Jean Valjean [zhahn val-zhahn] throughout this novel by Victor Hugo.	Les <u>Misérables</u> [lay mee-zay-rahb] [or <i>The <u>Miserable</u> Ones</i> or <i>The <u>Wretched</u> Poor</i>]
3	After Valjean spares Javert’s life, Javert commits suicide by this means.	<u>drowning</u> himself in the River Seine [or <u>jumping</u> off a <u>bridge</u> into the River Seine or equivalents]



Question #11: Social Studies – Psychology

10 points per part

The intrinsic type of this concept is often based on interest in the task at hand, while the extrinsic type is often based on rewards and punishments.		
1	Give this term for the reason somebody performs an action.	motivation [accept word forms]
2	This school of psychology, which was started by John B. Watson and included B. F. Skinner, focused on the use of extrinsic motivation to explain actions.	behaviorism [or behaviorist school or behaviorists]
3	This psychologist studied how people’s motivations change as they go through his pre-conventional, conventional, and post-conventional stages of moral development.	Lawrence Kohlberg

Question #12: Social Studies – Psychology

10 points per part

The Myers-Briggs Type Indicator applies ideas from this person’s book <i>Psychological Types</i> .		
1	Name this Swiss psychologist who wrote about archetypes within the collective unconscious.	Carl (Gustav) Jung [YOONG]
2	The first category on a Myers-Briggs Type Indicator determines where people focus their energy, and it classifies people as either ‘E’ or ‘I’. State what <i>both</i> the ‘E’ and the ‘I’ stand for.	extraversion [or extroversion] and introversion [either order; accept word-form variations like extravert and introvert]
3	Jung used this term to describe meaningful coincidences. This term refers to events linked by meaning, but not by cause.	synchronicity [or synchronizität]



Question #13: Science – Physics

10 points per part

For a heat engine, the maximum possible value of this quantity is 1 minus the ratio of the cold reservoir's temperature to the hot reservoir's temperature.		
1	Name this quantity that can be expressed as actual output divided by maximum potential output.	(machine) efficiency
2	The formula for the maximum efficiency of a heat engine was developed by this scientist. His namesake thermodynamic cycle has two steps in which heat is not exchanged, and two steps in which temperature is held constant.	(Nicolas Léonard) Sadi Carnot [sah-dee kar-noh] [accept Carnot cycle]
3	This adjective means a process in which temperature does not change.	isothermal process

Question #14: Science – Physics

10 points per part

This electromagnetic radiation has wavelengths between 400 and 700 nanometers.		
1	Name this part of the spectrum that is between ultraviolet and infrared.	visible light
2	Of the seven base SI units, this is the one that can be used to measure the intensity of light.	candela [prompt on cd or candle]
3	The definition of the candela is based on light at about 555 nanometers, which corresponds to this color. The correct answer is one of the standard seven “Roy G. Biv” colors.	green light



Question #15: Social Studies – World History

10 points

One Russian leader with this first name adopted the doctrine developed by Sergey **Uvarov** [oo-VAHR-awff] called “Orthodoxy, **Autocracy** [aw-TOK-ruh-see], and Nationality”. That leader, the first Russian leader with this first name, was targeted unsuccessfully by the Decembrists and died during the **Crimean** [“cry”-MEE-un] War. The second Russian leader with this first name fathered a girl who — according to legend — escaped execution, Anastasia, and was in charge when Russia lost the Russo-Japanese War. The family of that leader with this first name received advice from the mystic Rasputin. Identify this name of the tsar whose family was killed by the Bolsheviks in 1918.

Nicholas (I or II) or
Nikolai (I or II)

Question #16: Mathematics – Math Concepts

10 points

These mathematical things can be classified as **meromorphic** [“mare-oh-MORE”-fik] if they have poles but are otherwise **holomorphic** [“HOE-low-more”-fik]. If one of these things can be approximated locally by a convergent power series, it is classified as analytic. If one of these mathematical things is smooth, it can be differentiated repeatedly. If one of these things is both onto and one-to-one, it is called bijective, and has an inverse. These mathematical entities are mappings from a domain to a co-domain in which each input produces only one output. Name these mathematical things that are often labeled “ f of x ”.

functions [accept answers that also refer to complex inputs or outputs]



Question #17: Fine Arts – Art History

10 points

This is the color of the curtain in the back of Hans Holbein's *The Ambassadors*. A portrait by **Henri Matisse** [awn-ree mah-teess] of his wife shows a stripe this color running down the length of her face. In the *Arnolfini Portrait*, the bride wears a white cap and a dress of this color, which is supposed to represent hope. This is the color of the apple in **René Magritte's** [reh-nay mah-greet's] *The Son of Man*. Sculptures named for a man of this color are used to represent the Spring season and are made from leaves. Name this color often used for spaces with lots of plants, often grass.

green [accept more specific answers]

Question #18: Science – Chemistry

10 points

In nearly all of these elements, the electrical resistance increases with increasing temperature. In this class of elements, the Fermi level is inside the valence band, and the conduction band overlaps the valence band. The bonds named for these materials are between positive ions and conduction electrons, the latter of which are often referred to as a “sea of electrons”. Name these elements that are usually conductive and shiny, combinations of which are called alloys.

metals [prompt on **conductors**]



Question #19: Social Studies – Economics

10 points

Milton Friedman wrote that inflation is these things without legislation. Walter Williams said that one effect of these things is “eliminating transactions, and hence jobs”. The Latin phrase *ad valorem*, which means “according to value”, is used to describe some of these things. The rate of these things is plotted on the horizontal axis of a Laffer curve. Many countries, but not the U.S., use the value-added type. A tariff is one of these things applied to imports or exports. An audit often determines whether these have been paid properly. Name this charge imposed by the government, sometimes collected by the Internal Revenue Service.

taxation or taxes [accept more specific answers]

Question #20: Literature – U.S. Literature

10 points

This author wrote about Colonel [KER-nul] Mulberry Sellers in *The American Claimant*, and this author called the same character Eschol Sellers and Beriah Sellers in a novel this author wrote with Charles Dudley Warner, *The Gilded Age*. In another novel, this author wrote about Tom Canty and Prince Edward switching places. One of this author’s characters was taken care of by Miss Watson and her sister, the Widow Douglas. Some of this author’s novels were set in St. Petersburg, which was based on Hannibal, Missouri. Name this author of *The Prince and the Pauper* and *The Adventures of Tom Sawyer*.

Mark Twain [or Samuel Langhorne Clemens]



Question #21: Fine Arts – Classical Music & Opera

10 points per part

<p>German musicians say “B” instead of “B flat”, and “H” instead of “B natural”, so Germans can spell this composer’s name using musical notes — which he did in <i>The Art of Fugue</i>.</p>		
1	Name this Baroque composer.	Johann Sebastian Bach
2	This J. S. Bach work starts and ends with an aria that is the basis of the 30 songs in the middle. It is named for the harpsichordist believed to have performed them first.	<i>Goldberg Variations</i>
3	This friend of Bach composed “I know that my Redeemer lives”, a cantata originally attributed to Bach. His operas include <i>Pimpinone</i> [peem-pee-NOH-nuh] and <i>Der geduldige Socrates</i> [guh-DOOL-dih-guh].	Georg Philipp Telemann [GAY-awrk FIL-ip TEL-uh-mahn]

Question #22: Fine Arts – Classical Music & Opera

10 points per part

<p>Some historians credit Bartolomeo Cristofori for inventing this instrument.</p>		
1	Name this common keyboard instrument with 52 white keys and 36 black keys.	piano (forte) [accept forte piano]
2	This Ludwig van Beethoven piano piece was based on a waltz that another composer sent out to several people, asking them to write music based on his piece.	<i>Diabelli Variations</i> [or <i>33 Variations on a waltz by Anton Diabelli</i> ; prompt on Diabelli]
3	This is the popular name of Franz Schubert’s piece written for a piano, violin, viola, cello and double bass [base].	Trout Quintet



Question #23: Social Studies – World History

10 points per part

This war started when Edward III of England claimed that he should also be the king of France.		
1	Name this war that lasted from 1337 to 1453.	<u>Hundred Years'</u> War
2	During the second phase of the war, this person led troops successfully at Crécy [kray-see] and Poitiers [pwah-tee-ay]. This person never became king of England because he died before his father.	<u>Edward</u> , the <u>Black Prince</u> [or <u>Edward</u> of <u>Woodstock</u> ; prompt on <u>Edward</u> or the <u>Black Prince</u>]
3	The war eventually went in France's favor, with the tide turning when Joan of Arc ended a British siege against this city on the Loire [l'-war] River.	<u>Orléans</u> [or-lay-awn]

Question #24: Social Studies – World History

10 points per part

This period during the French Revolution began in 1793, when the Committee of Public Safety gained power and passed the Law of Suspects.		
1	Name this 10-month period during which many people were guillotined.	Reign of <u>Terror</u> [or la <u>terreur</u>]
2	This person radicalized the Committee of Public Safety when he became its president in August 1793. He was later guillotined along with his brother Augustin [oh-goo-stan].	Maximilien (François Marie Isidore de) <u>Robespierre</u>
3	This is the name of the political action that started with the decision by the National Convention to execute Robespierre and his allies. Those executions are sometimes called the White Terror.	<u>Thermidorian Reaction</u> [or <u>Réaction Thermidorienne</u>]



Question #25: Literature – British Literature

10 points per part

This descendant of Shield Sheafson [SHAY-uf-sun] settled the feud sparked by Ecgtheow's [EJ-thay-yoh'z] murder of Heathloaf [HAY-uh-thoh-loh-uf] of the Wylfings [WIL-feengz].		
1	Name this Danish king, whose mead hall was frequently attacked by Grendel.	King Hrothgar [RAWTH-gar]
2	After hearing of Grendel's nightly assaults, this son of Ecgtheow sails to Denmark and rips Grendel's arm off.	Beowulf
3	Name the mead hall that Grendel attacks. Grendel's arm was hung as a trophy in it.	Heorot [HAY-uh-"rot"]

Question #26: Literature – British Literature

10 points per part

In this play, the Earl of Gloucester ["GLOSS"-tur] has an eye ripped out, and following a servant's attempted intervention, the Duke of Cornwall rips out the other.		
1	Name this Shakespeare play in which Cordelia's love for her father initially is not rewarded, while the flattery of her sisters is.	<i>King Lear</i>
2	This wife of the Duke of Cornwall fell in love with Edmund, but so did her sister. Once their intentions became known, this evil daughter of King Lear was poisoned by her sister Goneril.	Regan
3	In a trial by combat in Act V, this son of the Duke of Gloucester represents the Duke of Albany and gets his revenge on the traitorous Edmund.	Edgar



Question #27: Mathematics – Algebra

10 points per part

As a noun, this word means the numbers used in a multiplication problem.		
1	Give this term that, as a verb, refers to rewriting a number or expression so that multiplication is involved.	<u>factor</u> (ing) [or <u>factorize</u> or <u>factorizing</u>]
2	This is the name for an expression that can be factored into the quantity $x + y$, and quantity, times the quantity $x - y$.	<u>difference of</u> (two) <u>squares</u>
3	Find the product 102 times 98. It may help to factor that into a difference of squares.	<u>9 996</u>

Question #28: Mathematics – Algebra

10 points per part

If the quantity $x + y$, and quantity, divided by x , [pause] equals x divided by y , [pause] then x divided by y equals this “ratio”.		
1	Name this number often represented by the Greek letter phi.	<u>golden</u> ratio [or <u>golden</u> proportion or <u>golden</u> mean or <u>golden</u> number or <u>golden</u> section; accept <u>divine</u> proportion]
2	What is the value of the golden ratio, rounded to the nearest hundredth?	<u>1.62</u>
3	In this sequence, the ratio of consecutive numbers approaches the golden ratio as you get further along in this sequence. It begins 1, 1, 2, 3, 5, 8.	<u>Fibonacci</u> sequence [prompt on <u>Lucas</u> [loo-kah] sequence(s) but do not prompt on “Lucas number(s)”]



Question #29: Science – Physics

10 points

When two parallel wires carry currents, this quantity equals permeability times length times the product of currents divided by the quantity 2 pi times distance. The coefficient of friction equals the ratio of two values of this quantity. The **centrifugal** [sen-TRIF-uh-gul] example of this quantity is fictitious and can be explained by inertia. According to Newton's second law, this quantity equals the derivative of momentum with respect to time, though a more common version of that law states that this quantity equals mass times acceleration. Name this phenomenon that objects can exert on each other, measured in newtons.

force(s) [accept more specific answers such as **force of attraction**]

Question #30: Social Studies – U.S. History

10 points

In 1934, two union strikers in this city were killed by police in an incident that became known as Bloody Thursday. Shortly after resigning from this city's Board of Supervisors in 1978, Dan White used the "Twinkie defense" after killing this city's mayor and a supervisor, George **Moscone** [maw-SKOH-nay] and Harvey Milk. Representatives from 50 countries met in this city in 1945 to create the United Nations. Most of this city was destroyed in 1906 by fires and a major earthquake. Name this city at the south end of the Golden Gate Bridge.

San Francisco, California



Question #31: Mathematics – Math Concepts

10 points

The sine of x , *quantity* squared, equals this number minus this number times the cosine of $2x$. The **Riemann** [REE-mahn] hypothesis states that nontrivial roots of the **zeta** [ZAY-tuh] function have real components equal to this number. The number of diagonals of a convex polygon equals this number times the number of vertices times three less than the number of vertices. The derivative of this number times x^2 ["*x squared*"] is just x . Raising a positive number to this exponent is equivalent to taking the square root. The area of a triangle equals this number times the length of the base times the height. Name this number between 0 and 1.

one-half

Question #32: Literature – World Literature

10 points

One member of this group hired a man based on his spitting into a river, and another member of this group teaches his servant to communicate using only hand signals. One member of this group was eventually named the Superior General of the Jesuits. One person in this group, who was born **René d'Herblay** [ren-ay dair-blay], participates in the ad-hoc trial of Milady de Winter, who was employed by Cardinal **Richelieu** [ree-shel-yoo]. This group, consisting of Athos, Porthos and Aramis, is joined by **D'Artagnan** [dar-tahn-yahn] in a novel by **Alexandre Dumas** [al-ex-an-druh doo-mah]. Name this group that often stated "One for all, and all for one".

the Three Musketeers
[accept Athos, Porthos and Aramis, accept Les Trois Mousquetaires, prompt on "Musketeers of the Guard"]



Extra Question #1: Fine Arts – Classical Music & Opera

10 points

This instrument and the violin are used to perform *Fantaisie* by **Camille Saint-Saëns** [kah-meel san sawn]. Beethoven's 10th String Quartet is nicknamed for this instrument even though this instrument is not used in it. Either a piano or this instrument is used to play Beethoven's *Six Variations on a Swiss Song*. Charles **Oberthür** [OH-bur-tur] and Elias Parish Alvars are composers who focused on this instrument, whose soundboard goes at an angle across its bottom. Versions of this instrument used in orchestras are large and have many foot pedals. Name these instruments that appear on the coat of arms of Ireland, and have up to 47 strings.

(concert) harps

Extra Question #2: Science – Biology

10 points

One animal in this phylum eats by catching plankton in a mucous web larger than itself. This phylum contains the sea butterfly and a striped species that consumed a lot of algae in the Great Lakes during the 1990s, causing a decrease in the fish population. An order in this phylum has an internal structure made of **aragonite** [uh-RAG-uh-“night”]. That order, the cuttlefish, is part of this phylum under the same class that includes the largest known invertebrates, squids, and which is called the **cephalopods** [SEF-uh-loh-“pods”]. The majority of species in this phylum are gastropods. Name this phylum of animals that live in a mantle, which might be a shell.

Mollusca or mollusks



Extra Question #3: Mathematics – Math Concepts

10 points

This person is the namesake of a type of relation that satisfies the condition “things that equal the same thing also equal each other”, which is this person’s first “common notion”. In an algorithm named for this person, you repeatedly subtract the smaller number from the larger number, which helps you find the two numbers’ greatest common factor. **János Bolyai** [YAH-nohsh BOH-yai] and **Nikolai Lobachevsky** [NEE-koh-“lie” loh-bay-CHEV-skee] developed a system of geometry that violate a rule this man stated; their system is called hyperbolic geometry. Name this ancient Greek mathematician who wrote the geometry textbook *Elements*.

Euclid (of Alexandria) [or **Eukleides**]

Extra Question #4: Social Studies – World History

10 points

The army that won independence for this country promised religion, independence, and unity, so it was called the Army of the Three Guarantees. Its leader, who briefly became emperor of this country, was **Agustín de Iturbide** [ah-goo-STEEN day ee-tur-BEE-day]. Several leaders of this country were assassinated in the early 20th century, including Francisco Madero and Venustiano Carranza. When this country did not pay its bills in the 1860s, France overthrew its president, **Benito Juárez** [bay-NEE-toh WAH-rez], and installed Emperor Maximilian. Name this country that lost a war to the United States in the 1840s, ceding land that is now part of Texas and California.

Mexico [or **México** [MAY-hee-koh] or United **Mexican** States or Estados Unidos **Mexicanos**]



Extra Question #5: Literature – U.S. Literature

10 points

This event used to use chips of wood, but the now-splintered black box could not fit them all. The night before this event, Misters Summer and Graves made the necessary preparation, with their efforts being stored at the coal company. This annual event was attended 77 times by Old Man Warner. It occurs on June 27th, and its target tries to declare that “it isn’t fair, it isn’t right” before being set upon. Name this event in which Tess Hutchinson is chosen to be stoned to death, in a short story by Shirley Jackson.

the **lottery** (from Shirley Jackson’s “The Lottery”)



Extra Question #6: Social Studies – U.S. History

10 points per part

The United States invaded this country in 1991 during Operation Desert Storm in the Gulf War, but left Saddam Hussein in power.		
1	Name this country, which the U.S. attacked after it annexed Kuwait.	(Republic of) Iraq [or (Jumhuriyat al-) Iraq]
2	This person was the Chair of the Joint Chiefs of Staff during the Gulf War. He later became the first African-American Secretary of State.	Colin (Luther) Powell
3	Name the Secretary of State during the war, who put together a coalition of 34 countries supporting the invasion. This person served at other times as Secretary of the Treasury and White House Chief of Staff.	James (Addison) Baker (III)

Extra Question #7: Social Studies – U.S. History

10 points per part

This person was the United States Army Chief of Staff during World War II, and he later served as Secretary of State and Secretary of Defense.		
1	Name this architect and namesake of the European Recovery Program, which gave money to Western Europe after the war.	George Marshall [accept Marshall Plan]
2	The first major aid payments made under the Marshall Plan went to Turkey and this European country, which was undergoing a civil war against communists at the time.	Greece [or Hellenic Republic or Ellas or Ellada or Elliniki Dhimokratia]
3	This city was divided into sectors after World War II. After the Soviets blockaded aid to this city, the Allies used an airlift to send supplies.	West Berlin , Germany



Extra Question #8: Science – Chemistry

10 points per part

If these solids don't sink to the bottom of the solution, they form a suspension or a sol, which is a type of colloid.		
1	Give this term for a solid that forms when the concentration of a solute exceeds its solubility.	precipitate [or precipitation]
2	Precipitation often occurs in the “single” and “double” versions of this class of reactions, in which one species takes the place of another or two species swap places.	(single or double) displacement reaction or replacement reaction [or salt metathesis reaction]
3	This compound precipitates out of hard water when it is boiled. This compound is in both calcite and aragonite, which form limestone.	calcium carbonate [prompt on CaCO₃]

Extra Question #9: Science – Chemistry

10 points per part

This element is the second-most abundant element in the universe.		
1	Name this lightest noble gas.	helium [accept He]
2	At extremely low temperatures, helium exists in this state of matter, exhibiting a complete lack of viscosity [viss-KAH-sih-tee].	superfluidity
3	Helium and neon are often used as a shielding gas in this type of welding, especially the gas tungsten version.	(gas medal) arc welding [accept MIG welding or metal inert gas welding; accept TIG welding or tungsten inert gas welding]