

FACTS

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PACKET 02

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TOSSUPS

1. **The enzymes Ef-Tu and Ef-G bind during steps in this process, and the antibiotic tetracycline works by inhibiting this process. The sequence AGGAGGU is important for initiating this process in prokaryotes; that sequence is known as the Shine-Dalgarno sequence. In bacteria, a formyl group is present in the first compound involved in this process, which is encoded by an (*) adenine-uracil-guanine sequence.** This process involves a molecule shaped like a clover leaf, which binds to the A site of a certain organelle. In this process, the aforementioned tRNA molecules match their anticodons to codons and carry amino acids to the ribosome. For 10 points, name this process in which an mRNA sequence is read to synthesize proteins.

ANSWER: translation [do not accept “transcription”, do not accept “DNA translation”]

2. **In one appearance, this character’s fixation on a piece of lead piping causes the narrator to think that this character has grown too old. One collection featuring this character plays on his first name with such titles as “The Capture of Cerberus”, in which this character goes to a nightclub with Countess Vera Rossakoff. This character is puzzled by a scarlet kimono in his most famous appearance, in which he aids Monsieur Bouc. While Captain (*) Hastings usually accompanies this character, Dr. Sheppard acts as an unreliable narrator in *The Murder of Roger Ackroyd*. *Murder on the Orient Express* features, for 10 points, what mustached Belgian detective created by Agatha Christie?**

ANSWER: Hercule Poirot [accept either underlined answer]

3. **A woman best known for manifesting in this animal form mothered Closter and was a daughter of the wool dyer Idmon. One of these animals used a question posed by his wife Aso to trick a python into laying straight on a palm branch. One of them attempted to store all the world’s wisdom in a calabash. A Native American (*) “Grandmother” goddess appears as this animal. One traded a leopard, python, and some hornets to Nyame for all the world’s stories. A woman transformed into this animal with aconite weaved the sexual exploits of Zeus into a tapestry destroyed by a jealous Athena. For 10 points, after that, Arachne became what animal?**

ANSWER: spider [or obvious equivalents]

4. **5-dehydro-m-xylene exhibits the “anti-” form of this property due to its violation of Hund’s Rule. A team of physicists from MIT discovered that Lithium gas exhibits this property below 1 Kelvin. The XY model describes this phenomenon and is a generalization of the one-dimensional Ising model. Materials exhibiting this property display a (*) hysteresis loop and have aligned spins. This property, which disappears above the Curie temperature, is present in materials such as iron and cobalt. For 10 points, name this phenomena, a form of magnetism present in permanent magnets.**

ANSWER: ferromagnetism

5. **Characters in one collection by this author include “The Masked Dyer of Merv”, an Islamic prophet who secretly has leprosy. In one story by this man, a search for missing pages in the *Anglo-American Cyclopaedia* leads to the discovery of a world whose language contains no nouns. In addition to writing *A Universal History of Iniquity*, this author created Tlön (*) and described a spot in Carlos Daneri’s cellar that shows every point in the universe. In another story by this man, Captain Richard Madden pursues a descendent of Ts’ui Pen who ultimately murders Dr. Albert. For 10 points, name this Argentinian author of ‘fictions’, including “The Aleph” and “The Garden of Forking Paths”.**

ANSWER: Jorge (Francisco Isidoro) Luis **Borges** (Acevedo)

6. **Composer and genre required. In a recording of one of these pieces with Stokowski, Glenn Gould applied several unusual accelerandos to the opening arpeggios. An orchestral passage in the distant key of B major follows the soft G major introduction in the fourth of these pieces. In the fifth of them, the second movement leads directly into the third with the drop of a bassoon note. Keeping with classical tradition, all five of these works end with rondos. Massive orchestral chords followed by virtuosic cadenza passages open the E-flat major final one of these pieces, which was dedicated to Archduke Rudolf and is nicknamed the (*) “Emperor”. For 10 points, name these pieces for piano and orchestra by the composer of “Für Elise”.**

ANSWER: **piano concerti** [accept **concertos** or **concerti**] by Ludwig van **Beethoven** [prompt on partial answer]

7. **In 2011, Operation Eagle was launched in this region to combat the insurgent group Ansar Bayt al-Maqdis. This region was invaded in Operation Badr, which used water cannons to break through the Bar Lev line. The United Nations Emergency Force was stationed in this region after it was invaded by Britain, France, and (*) Israel following Gamal Abdel Nasser's nationalization of the Suez Canal. This peninsula, which had previously been annexed by Israel during the Six Day War, was invaded by Egypt during the Yom Kippur War. For 10 points, name this Egyptian peninsula located between the Suez Canal and Israel.**

ANSWER: **Sinai** peninsula [prompt on “Egypt”]

8. **In 2016, a former stock car driver was elected to a two-year term as this state’s governor. One senator from this state briefly became president pro tempore of the Senate after Daniel Inouye’s death. This state’s “hub and spoke” model of fighting opioid addiction was created under former governor Peter Shumlin. This state’s most famous politician was portrayed on Saturday (*) Night Live by Larry David. Patrick Leahy represents this state in the Senate alongside a man whose failed presidential campaign morphed into the group Our Revolution. That former mayor of Burlington describes himself as a “democratic socialist”. For 10 points, name this New England home state of Bernie Sanders.**

ANSWER: **Vermont**

9. **The work of this thinker is split into two eras by an “epistemological break” described by Louis Althusser. This thinker’s work was extended to describe how social relations are “reified.” This thinker described how the “superstructure” of society is predicated on an economic “base.” His work was expanded upon by both Gyorgy [George] Lukacs and the (*) Frankfurt School. He argued that the substitution of the C-M-C pathway by the M-C-M cycle leads to an detestable emphasis on “surplus value” and to commodity fetishism. People are alienated from each other and from their work under capitalism according to this theorist. For 10 points, name this author of *Das Kapital*.**

ANSWER: Karl **Marx**

10. This country's capital was relocated to a city later given an epithet meaning "of heroism" after reactionary forces took over its capital during the Liberal War. One of this country's colonies declared independence after its monarch gave the Fico Speech. This country's monarch Joseph I suffered from claustrophobia and lived in a tent city following an (*) earthquake that devastated its capital. Its war with the Netherlands during the Iberian Union led to the loss of Malacca and occupation of Brazil and Angola. For 10 points each, name this country whose royal family fled to Rio de Janeiro during the Napoleonic Wars.

ANSWER: Portugal

11. An atom of this element is bonded to a sulfur atom in VX, which allows it to inhibit nerve function. The 1906 Berne Convention banned the use of one form of this element, which had caused large numbers of incidents of jaw necrosis. When this element is submerged in molten lead, it can crystallize into a form which sublimates at high temperatures in an inert atmosphere, its (*) violet allotrope. This element was discovered in an attempt to turn urine into gold by Hennig Brand. This element's white form glows when exposed to oxygen, and in organisms, this element forms the backbone of DNA. For 10 points, name this element found in match heads, symbolized P.

ANSWER: phosphorus [prompt on "P"]

12. This figure inspired the placement of a phrase meaning "exalted cranes" after the names of Manat, al-Uzza, and Allat. Melek Taus's resemblance to this figure, who is also called a peacock, motivates the shunning of Yazidis by their neighbors. This being refused to bow to another made from mud, since he was made of fire. Pebbles are thrown at three *ja-mar-at* in Mina to symbolically (*) stone this figure. Superstition advises folding the corner of a prayer rug to prevent this figure from using it. He tempted a prophet to praise three Meccan goddesses. For 10 points, name this jinn who allegedly made Muhammad recite namesake "bad" verses.

ANSWER: Iblis [or al-Shaitan; or Shaitan; or the (Muslim) Devil; or Satan; or Azazil]

13. The *HMS Romney* was sent to this city to assist commissioner Charles Paxton in collecting duties. A British withdrawal from this city, an event commemorated by Evacuation Day, occurred after cannons were transported to Dorchester Heights by Henry Knox. An engraving of another event in this city falsely depicts troops being ordered by Thomas (*) Preston to fire on a crowd; the first casualty of that event was Crispus Attucks. A group of men led by Samuel Adams snuck aboard ships in this city's harbor and threw crates of tea overboard. For 10 points, name this Massachusetts city, the place of a namesake 1770 "Massacre" and 1773 "Tea Party".

ANSWER: Boston, Massachusetts

14. An opening E major horn solo in an opera by this composer forms the basis for many of its later themes. He's not Verdi, but the aforementioned opera features the sounds of anvils as two characters descend into another realm. In another opera by this composer, a town clerk's serenading is repeatedly interrupted by the work of a cobbler. That opera's C major overture suddenly switches to a chorus, during which the knight (*) Walther steals numerous glances at Eva. This composer, a notorious anti-Semite, wrote an essay on Judaism in music. For 10 points, name this German composer of *Die Meistersinger von Nürnberg* and the *Ring Cycle*.

ANSWER: (Wilhelm) Richard Wagner

15. **One wicked character in this novel claims to have teleported to Yalta, but fails to convince three characters of it despite providing his signature as proof. Another character in this novel stages a magic show in which women receive clothing and accessories that later disappear, leaving them naked. That character has a gigantic cat named (*) Behemoth and predicts the decapitation of Berlioz, an editor at MASSOLIT. The title writer of this novel is told “manuscripts don’t burn”, referring to a book he had written about Pontius Pilate. The devil Woland and his retinue visit the Soviet Union in, for ten points, what novel by Mikhail Bulgakov?**

ANSWER: *The Master and Margarita* [accept *Master i Margarita*]

16. **The Turquoise Hill mine was developed to exploit this region’s gold and copper deposits. The Three-North Shelter Forest Program is meant to curb the expansion of this region. The Greater Khingan Mountains form this area’s eastern border, and a 1920 expedition into this desert’s (*) Nemegt Basin was the first to discover dinosaur eggs. This region is bordered by the Mu Us Desert to the South and the Dzungarian Basin to the West. The Tian Shan mountains separate this region from the Tarim Basin and the Taklamakan Desert, and the Altai mountains lie to its north. For 10 points, name this desert this covers much of northwest China and parts of Mongolia.**

ANSWER: Gobi Desert [prompt on “The Steppe” or “Northern China” or “Inner Mongolia”]

17. **Upon capturing one city in this province, Khusrau II built a new city to resettle its population called “better-than” that city. One empire based in this province was led by Queen Zenobia after her husband’s death. This province was the main power base of a general who was defeated at the Battle of (*) Carrhae, Marcus Licinius Crassus. The city of Palmyra and the earthquake-prone city of Antioch were located in this province, which contained portions of modern Turkey along with its modern namesake country. For 10 points, name this Roman province that shares its name with a modern country with its capital at Damascus.**

ANSWER: Syria

18. **In one of this author’s works, Frank prophesizes that a missing character will return since he was lost on “his favorable day.” In that play, a storm destroys an apple tree planted for that missing character, whose father blames a neighbor for the sale of cracked engine cylinder heads. In another play by this author, a character refuses to sign a confession and defile his (*) name for he "cannot have another in his life." In that play, one character exclaims "More weight!" as stones are placed on him to extract a confession of witchcraft. For 10 points, name this playwright who wrote about Joe Keller in *All My Sons* and who allegorized the McCarthy trials as the Salem Witch Trials in *The Crucible*.**

ANSWER: Arthur Miller

19. **Blue robes part to reveal the nude central goddess dipping arrows in water in this man’s *Mars, Venus, and Vulcan*. This artist, who depicted soldiers waving British flags amidst cannon fire in *The Death of Major Peirson*, was criticized for painting William Pitt collapsing in the House of Lords. This artist featured Henry Pelham holding the title (*) animal on a gold chain in *A Boy with a Flying Squirrel*. Two men reach out to grab a naked figure in the water while a man standing on the edge of a raft attempts to spear the title creature in this artist’s most well-known work. For 10 points, name this American painter of *Watson and the Shark*.**

ANSWER: John Singleton Copley

20. **This function can be approximated using Hardy's approximation on the domain 0 to pi over 2. The Fourier transform of even functions is written in terms of this function alone, and the hyperbolic analog to this function is given by $e^x + e^{-x}$ over two, defining a catenary curve. The (*) dot product of two vectors is proportional to this function of the angle between them. A law named for this function is a generalized form of the Pythagorean Theorem, and one over this function yields the secant function. For 10 points, what trigonometric function is given by dividing the adjacent side of a right triangle by its hypotenuse, and is thus the cofunction of sine?**

ANSWER: **cosine**

TB. **Charles Mackay described one of these events, which involved a process called *windhandel* that saw the trading of goods with names like “Admiral of Admirals” and “General of Generals.” John Law oversaw what would become one of these events named for the Mississippi territory. Robert Walpole remedied the aftermath of one of these events created by the (*) South Sea Company. Investment in tulips in the 17th century Netherlands and real estate in the 2000s led to these economic events. For ten points, name these economic events in which overspeculation in a financial instrument or commodity triggers hyperinflation and then a crash in prices.**

ANSWER: economic **bubbles** [accept asset/stock market/price/financial **bubbles** or speculative **manias** or **balloons**; prompt on “crash” before mention]

BONUSES

1. In the 19th century, lots of Brits thought they needed a political revolution in their country. For 10 points each:
[10] Name this reform movement spearheaded by the working class. Among other things, it demanded universal male suffrage and a secret ballot, as laid out in this movement's namesake manifesto.

ANSWER: **Chartism**

[10] Chartist reforms centered on opening the franchise and membership of this lower house of the British Parliament.

ANSWER: House of **Commons**

[10] Chartism wasn't always peaceful. Led by John Frost, this 1839 rebellion in Wales saw 10,000 Chartists violently clash with authorities in an effort to free imprisoned dissidents.

ANSWER: **Newport Rising**

2. Manifestos of this movement were written by Hugo Ball and Tristan Tzara. For 10 points each:

[10] Name this 20th century art movement that embraced nonsense and abstract art. It evolved into the related Surrealist movement.

ANSWER: **Dadaism**

[10] This Dada work by Marcel Duchamp is a urinal signed 'R. Mutt'. This piece was rejected by the Society of Independent Artists, leading Duchamp to pen an essay arguing for its legitimacy as art.

ANSWER: **Fountain**

[10] This German artist was a pioneer of both Dada and Surrealism. His works include *Forest and Dove* and *Two Children Are Threatened by a Nightingale*

ANSWER: Max **Ernst**

3. In this work, a "self-taught" man who attempts to alphabetically read all the books in the library is revealed to be a pedophile and ejected from the library. For ten points:

[10] Name this novel set in Bouville in which that man, Ogier P., appears. The protagonist of this novel has revelation staring at the roots of a chestnut tree.

ANSWER: **Nausea** [accept *La Nausée*]

[10] This French existentialist author of *Nausea* wrote about a mysterious room in *No Exit*.

ANSWER: Jean-Paul **Sartre**

[10] This other Sartre play, based on Aeschylus' *Oresteia*, features an existentialist Orestes who rejects the dominion of Zeus and refuses to acknowledge his matricidal guilt.

ANSWER: *The **Flies*** [accept *Les **Mouches***]

4. During this battle, the *Reina Cristina* unsuccessfully attempted to ram the USS *Olympia*. For 10 points each:

[10] Name this 1898 naval battle in which the US Asiatic Squadron decisively defeated the Spanish Pacific Squadron.

ANSWER: Battle of **Manila Bay**

[10] This commander led the American flotilla during the Battle of Manila Bay. He later became the only person in US history to ever achieve the rank of Admiral of the Navy.

ANSWER: George **Dewey**

[10] The US was brought to the brink of war with Germany by a 1899 civil war in this Pacific island nation. That crisis in this nation was resolved when a typhoon heavily damaged both fleets.

ANSWER: **Samoa**

5. This satellite is slated to launch in 2019. For 10 points each:

[10] Name this successor to the Hubble Space Telescope, a collaboration between NASA, the Canadian Space Agency, and the European Space Agency.

ANSWER: James **Webb** Space Telescope [accept **JWST** or **Next Generation Space Telescope**]

[10] The James Webb Space Telescope will orbit near the second of these points, located approximately a million miles away from Earth and outside the orbit of the Moon. These points are equilibrium points in the restricted three-body problem.

ANSWER: **Lagrangian** points [accept **Lagrange** points; accept **L**-points or **libration** points]

[10] The James Webb Space Telescope primarily observes in this part of the electromagnetic spectrum, which has longer wavelengths than those of visible light, but shorter wavelengths than those of microwaves.

ANSWER: **infrared** radiation [accept **infrared** light or **IR**]

6. This figure is said to be associated with the *fukú americanus* curse, which can be warded off by saying “zafa.” For 10 points each:

[10] Name this figure who is compared to Sauron and Arawn in one novel. This man was the dictator of the Dominican Republic from 1930 to 1961.

ANSWER: Rafael (Leónidas) **Trujillo** (Molina) [accept **El Jefe** or **The Chief**]

[10] Trujillo is a character in *The Brief Wondrous Life of Oscar Wao*, a novel by this author who also wrote the short story collections *Drown* and *This Is How You Lose Her*.

ANSWER: Junot **Díaz**

[10] *The Brief Wondrous Life of Oscar Wao* takes place in this US state. William Carlos Williams wrote *Paterson*, a modernist epic about a city in this state.

ANSWER: **New Jersey**

7. Name some indie video games, for 10 points each:

[10] This widely-anticipated game by Hello Games featured a sandbox universe of 18 quintillion planets. Its 2016 release was met with negative reviews, due to the lack of multiplayer and other promised features.

ANSWER: **No Man's Sky**

[10] This 2D sandbox game developed by Re-Logic features bosses such as the Eye of Cthulhu and Skeletron. This game's graphics and gameplay received many favorable comparisons to Minecraft.

ANSWER: **Terraria**

[10] This other game set the record for the fastest game to reach one million dollars on Kickstarter. It was developed by a group of former Rare employees as a spiritual successor to Banjo-Kazooie.

ANSWER: **Yooka-Laylee**

8. Thinkers in this discipline include Alexandre Lacassagne and his rival Cesare Lombroso. For 10 points each:

[10] Name this discipline to which the “broken windows” theory belongs. Theorists in this discipline seek to reduce recidivism and discourage actions like larceny and murder, possibly through incarceration.

ANSWER: **criminology**

[10] In *Discipline and Punish*, Michel Foucault analogized all hierarchical institutions to this specific kind of building. This prison, imagined by Jeremy Bentham, causes all inmates to act as if they are being watched, since they never know whether or not they are.

ANSWER: **Panopticon** [accept **panopticism**]

[10] This thinker argued that punishments should correspond in intensity to the crime and should quickly follow crime in order to maximize deterrence. This man wrote *On Crimes and Punishments*.

ANSWER: Cesare (Bonesana-) **Beccaria**

9. Answer the following about the refinement of petroleum, for 10 points each:

[10] The various components of petroleum are separated using this process, generally used to separate mixtures based on differences in the boiling points of its components.

ANSWER: fractional **distillation**

[10] Large alkanes found in petroleum typically undergo this process, which converts long-chain hydrocarbons into smaller alkanes and alkenes by breaking carbon-carbon bonds.

ANSWER: **cracking**

[10] Fuels produced from refinement are given octane ratings, which are measured by comparing a fuel's performance to a mixture of iso-octane and this other hydrocarbon, defined to have an octane rating of zero.

ANSWER: n-**heptane** [or C_7H_{16} , or $H_3C(CH_2)_5CH_3$]

10. Answer some questions about buildings in New York City, for 10 points each:

[10] This Shreve, Lamb & Harmon-designed skyscraper was the tallest building in the world at the time of its completion in 1931. It shares its name with a moniker for the state of New York.

ANSWER: **Empire State** Building

[10] This early Manhattan skyscraper sits on a triangular lot formed by Fifth Avenue, Broadway, and East 22nd Street. Daniel Burnham, this building's designer, opposed the addition of its so-called "cowcatcher" retail space.

ANSWER: **Flatiron** Building [accept **Fuller** Building]

[10] A bronze statue of Atlas holding the heavens stands outside this building, home to the headquarters of NBC and to the studios of *Saturday Night Live* and *The Tonight Show*.

ANSWER: **30 Rockefeller** Plaza [or **30 Rock**; accept **Comcast** Building or **RCA** Building or **GE** building; prompt on "Rockefeller" or "Rockefeller Plaza" or "Rockefeller Center" by asking for a specific building]

11. This man was crowned King of America in the Dirksen Senate Office Building in 2004. For 10 points each:

[10] Name this founder of *The Washington Times* and the Unification Church, whose members he claims to be the "True Father" of.

ANSWER: Sun Myung **Moon**

[10] Moon's Unification Church is widely known for their Blessing ceremonies, which perform this rite *en masse*. In the Anglosphere, it usually sees both participants answer "I do" to questions from a priest and exchange rings.

ANSWER: **weddings** [or **marriages**; or **matrimony**; or obvious equivalents]

[10] Standard English and American wedding vows originate from this book, which Thomas Cranmer edited while serving as Archbishop of Canterbury.

ANSWER: **Book of Common Prayer** [or **BCP**]

12. This author's name means "plantain" when written in kanji. For 10 points each:

[10] Name this Japanese poet who wrote such volumes as "Narrow Road to the Deep North" and "Monkey's Raincoat."

Answer: Matsuo **Basho**

[10] Basho was a master of this form composed of three lines of five, seven, then five syllables. It is mixed with prose in the Haibun form in which he wrote his magnum opus, *The Narrow Road to the Deep North*.

ANSWER: **haiku**

[10] Basho notably did *not* adhere to the traditional haiku formula, which used these words associated with specific seasons.

Answer: **kigo** [prompt on "season words"]

13. Answer the following about coupled oscillations, for 10 points each:

[10] The system consisting of a "double" version of these swinging weights is an example of a coupled oscillator, as well as a classic example of a dynamic system exhibiting sensitivity to initial conditions.

ANSWER: double **pendulum**

[10] These entities describe the patterns of motion of a coupled oscillator when all parts of the system are moving in phase and at the same frequency. The "vibrational" types of these entities can describe chemical bonds.

ANSWER: normal **modes** [accept vibrational **modes**]

[10] In the continuous limit of many coupled oscillators, one can derive this second-order linear partial differential equation that describes how the namesake entities propagate through time and space.

ANSWER: the **wave** equation

14. This empire was formed in the 7th century AD following the end of the Zhangzhung kingdom. For 10 points each:

[10] Name this ancient Himalayan empire which flourished until the 9th century and had a capital at Lhasa.

ANSWER: **Tibetan Empire**

[10] This man founded the Tibetan Empire and created the Tibetan alphabet. He also introduced Buddhism to the region and commissioned the Jokhang Monastery in Lhasa.

ANSWER: **Songtsen Gampo**

[10] Tibetan troops fought alongside the army of this Islamic State that defeated a Tang army led by Gao Xianzhi at the Battle of the Talas River in 751, soon after the revolt of Abu Muslim brought this dynasty into power.

ANSWER: **Abbasid** Caliphate

15. This country lies south of the Jutland Peninsula and borders both the Baltic and North Seas. For 10 points each:

[10] Name this European country whose city of Munich hosts the annual Oktoberfest.

ANSWER: **Germany** [accept **Deutschland**]

[10] This mountainous woodland region in southwest Germany includes the city of Freiburg and the source of the Danube River. This region is noted for its cuckoo clocks.

ANSWER: **Black Forest** [accept **Schwarzwald**]

[10] The Black Forest is located in this German state, which borders both France and Switzerland to its west. This state is Germany's third-largest by area and has its capital in Stuttgart.

ANSWER: **Baden-Württemberg**

16. Rush Rhees translated Wittgenstein's *Remarks on* [this book], wherein he first called metaphysics "a kind of magic." For 10 points each:

[10] Name this pioneering work of mythography by James Frazier that states that society progresses from magical to religious and finally scientific stages of thought.

ANSWER: *The **Golden Bough**: A Study in Magic and Religion*

[10] *The Golden Bough* is named for an object this priestess tells Aeneas to find on a tree for entry into the underworld. *The Waste Land*'s epigraph comes from a scene in the *Satyricon* in which this Cumaean says she wants to die.

ANSWER: (the) Cumaean **Sibyl** [or **Deiphobe**, **Amaltheia**, **Demophile**, **Herophile**, or **Taraxandra**; do not accept the "Erythraean Sibyl" or "Sibyl of Dodona"]

[10] T.S. Eliot cites *The Golden Bough* and Jessie Weston's *From Ritual to Romance* as his major sources for *The Waste Land* in its notes. The latter book focuses on the legend of this object from which Jesus drank at the Last Supper.

ANSWER: (the) Holy **Grail** [or the **Grail** Legend]

17. A couple in this play seem to forget they are married but eventually figure it out after asking each other where they live. For 10 points each:

[10] Name this Absurdist work that features nonsensical banter between the Smiths, the Martins, and the fire chief during an unspecified visit.

ANSWER: *The **Bald Soprano*** [accept ***The Bald Prima Donna***; accept ***La Cantatrice Chauve***]

[10] This author of *The Bald Soprano* frequently wrote about Berenger in works like *The Killer* and *Exit the King*. An old couple prepare for invisible guests in his *The Chairs*.

ANSWER: Eugene **Ionesco**

[10] Although he was born in Romania, Ionesco spent most of his childhood in this country. Jean Anouilh was a dramatist from this country who attacked its Vichy government in an adaptation of *Antigone*.

ANSWER: **France**

18. This symphony's first movement parodies a theme from Hitler's favorite operetta, Franz Lehár's *The Merry Widow*. For 10 points each:

[10] Name this symphony which features a 22-bar snare drum "invasion theme" and is nicknamed for a city under siege.

ANSWER: "**Leningrad**" Symphony [accept Symphony No. **7** by Dmitri **Shostakovich**; accept **Shosty 7**; prompt on "Symphony No. 7" by asking for a composer]

[10] In addition to the DSCH motif, the third movement of this Shostakovich symphony uses a repeated horn solo to represent Elmira Nazirova. It is unknown whether this symphony's scherzo depicts Stalin.

ANSWER: Symphony No. **10**

[10] A flute solo in the first movement of Shostakovich's Symphony No. 5 quotes the "Habanera" from this Bizet opera, in which Don Jose and Escamillo vie for the title character.

ANSWER: **Carmen**

19. Answer the following about birds, for 10 points each:

[10] The fastest animal in the world is this avian, which can go up to 200 mph during its hallmark dive. Another name for this bird is the “duck hawk”.

ANSWER: **peregrine** falcon [accept *Falco peregrinus*]

[10] Like humans, male and female birds have two types of sex chromosomes. Unlike humans, however, bird sex chromosomes are labeled with these two letters.

ANSWER: **W** and **Z** [accept in either order]

[10] Bird excrement uses this nitrogenous waste, which is more energy-intensive to create than other alternatives. However, this compound has a lesser toxicity than the similar urea.

ANSWER: **uric acid**

20. In this conflict, the communist National Liberation Front attempted to overthrow the reigning King George II. For 10 points each:

[10] Name this conflict which occurred between 1946 and 1949, considered to be the first proxy war of the Cold War. After this conflict, a military junta called the Regime of the Colonels took power.

ANSWER: **Greek Civil War**

[10] The Greek Civil War is often paired with another civil war in this neighboring country, where Mustafa Kemal Ataturk instituted secular reforms.

ANSWER: **Turkey** [accept **Turkiye**]

[10] The Greek and Turkish Civil Wars saw one of the first applications of this doctrine, in which the United States would provide aid to any nation threatened by communism.

ANSWER: **Truman Doctrine**

TB. Euclid's lemma and the Chinese Remainder Theorem can be proved using this theorem. For 10 points each,

[10] Name this theorem, which for relatively prime integers x and y states that there exists a linear combination of x and y which equals one.

ANSWER: **Bézout's identity** [accept **Bezout's lemma** or **Bezout's theorem**]

[10] In general, for integers x and y , Bézout's identity states that there exists a linear combination which equals this value for x and y . This value is the largest integer which divides each of a set of integers

ANSWER: **greatest common divisor** [or **greatest common factor**; accept **gcd** or **gcf**]

[10] This algorithm can be used to find the gcd of two numbers by repeatedly subtracting one number from the other until one reaches zero. Its "extended" form can be used to find the coefficients that solve Bezout's identity.

ANSWER: **Euclidean** algorithm [or **Euclid's** algorithm]