2020 Reinstein Set – Packet 4

Tossups

1. One of the most famous jazz performers on this instrument bought his instrument the day after hearing Charlie Christian perform on it. That performer, whose songs include "Bumpin' on Sunset" and "Four on Six", was Wes Montgomery. He famously played this instrument with the side of his thumb. Another performer on this instrument, who composed the songs "Nuages" [noo-ahj] and "Minor Swing", was Django [JAYN-goh] Reinhardt. Jazz performers often use the archtop type of this instrument, such as the one made by Gibson, and they typically use electric instruments. Name this fretted instrument that usually has six strings and may be played with a pick or strummed.

Answer: **guitar**s

2. This playwright often collaborated with Elisabeth Hauptmann; their most famous work shares lines with their play *Happy End*. In that famous work, this person depicted Police Chief Jackie "Tiger" Brown trying to help somebody who is sentenced to hang anyway. This writer and Hauptmann also collaborated with Kurt Weill ["vile"], who wrote the music for that play. This person collaborated with Margarete Steffin on a play in which the title characters sell provisions to soldiers during the Thirty Years' War. A member of that family is nicknamed "Swiss Cheese". Name this playwright who worked on *Mother Courage and Her Children* and *The Threepenny Opera*.

Answer: (Eugen) Bertolt (Friedrich) **Brecht** [BAIR-tohlt **brekt**]

3. This person's signature was four lines, with the top line being an 'S' between two dots. This person and his brothers Bartholomew and Diego were investigated by Francisco de Bobadilla [boh-bah-DEE-yah], who sent them home in chains. This person and his followers established the settlement of La Navidad [nah-vee-DAHD], which was destroyed within one year. This person's first of four voyages went to what is now the Bahamas, Cuba, and Hispaniola, probably making him the first European to reach those places. He named one of his settlements "La Isabela" after the queen who supported him. Name this person who sailed in 1492 using the ships the *Pinta*, *Niña [NEEN-yah]*, and *Santa María*.

Answer: Christopher **Columbus** [or Cristoforo **Colombo** or Cristóbal **Colón**]

4. The mediant inequality is about an unconventional way to combine these expressions. The "continued" version of this kind of expression is a repetitive way to express some irrational numbers. When these expressions are used in exponents, a part of them determines what type of root to take of the base. These expressions are called "improper" when the top number is greater than the bottom number. Name this way to write a ratio using a numerator and denominator.

Answer: **fraction**s [accept **fraction**al expressions; prompt on **ratio**]

5. The only animals of this type native to the New World are Ameridelphia [uh-MAIR-ih-DEL-fee-uh] and the Monito del monte [moh-NEE-toh del MAHN-tay]. One member of this order or subclass of animals can only have 13 offspring survive for any length of time after they are born together, even though sometimes more are born. Those animals are opossums. The largest carnivorous animal in this group is the Tasmanian devil. When these animals are born, they are very underdeveloped, so they are more dependent on their mothers than placental mammals. Most of these animals live in New Guinea and Australia. Name this type of mammal whose mothers have pouches, including the kangaroo.

Answer: **marsupial**s or **marsupial**ia

6. This person helped write and sing Adam Lambert's song "Fever". At the 2010 MTV Video Music Awards, this person wore a dress made of raw beef. In an episode of *The Simpsons* in which Lisa writes a blog titled "Truth Teller", this person appears in Springfield and performs the song "Little Monsters", which is what she usually calls her fans. This person was nominated for an Academy Award for the song "'Til It Happens to You" and won an award for the song "Shallow". Name this co-star of the movie *A Star Is Born* whose hits include "Alejandro", "Poker Face", and "Born This Way".

Answer: Lady **Gaga** or [Stefani (Joanne Angelina) **Germanotta**]

7. Meetings that occurred in this city's gardens of the British Embassy in 1906 led to its country having a new constitution. This city was used as a capital by the founder of the Qajar [kah-JAR] dynasty starting in 1786. In 1953, the CIA—with British support—organized riots in this city as part of Operation Ajax to overthrow the prime minister, who had nationalized the oil industry. In 1979, a group of students took over the American embassy in this city, and for over a year they held over 50 American hostages. Name this city that, during the 1980s, was the home of Ayatollah Ruhollah Khomeini [roo-HOE-luh koe-MAY-nee] and which is the capital of Iran.

Answer: **Tehran**, Iran

8. One character in this novel sings a song he made up called "Ducks' Ditty" that the ducks do not like. That character and another then travel along a river to another character, and they take some horses out to go camping. That occurs in "The Open Road", an episode in this novel that takes place before the characters visit Badger, who is about to go to bed. Though this novel was not written by A. A. Milne, he adapted it for the stage as *Toad of Toad Hall.* Name this children's novel about Rat and Mole, written by Kenneth Grahame.
Answer: *The **Wind in the Willows***

9. Sodium is combined with this element to make a molecule important in airbags, sodium azide [AYZ-"eyed"]. This element is combined with calcium carbide in the Frank-Caro process to produce calcium cyanamide ["cyan-um-eyed"]. This element combines with hydrogen to form amines [uh-MEENZ], which are a part of amino acids. An atom of this element is bound to three oxygen atoms by the Ostwald process, which is often used after an atom of this element is bound to three hydrogen atoms by the Haber process. This element is by far the most abundant element in the Earth's atmosphere. Name this element that combines with hydrogen to form ammonia.
Answer: **nitrogen** [accept **N**]

10. This god shared his name with the ruler of the Utgard Castle. This god killed Fimafeng [FIM-ah-feng] after other gods complimented Fimafeng and Eldir; soon after that, this god insulted Bragi [BRAHG-ee] and Othin [OH-thin]. This god turned Idunn [EE-dun] into a nut in order to rescue her from Thiazi in a story in which Thiazi takes the form of an eagle and this god takes the form of a falcon. This god and Heimdall [HYM-dahl] kill each other during Ragnarök. This god made an arrow or spear out of mistletoe to kill Baldr ["balder"]. This god is the father of Hel, Fenrir, and Jörmungandr [YOR-mun-gahn-dur] and the mother of Sleipnir [SLYP-neer]. Name this Norse trickster god.
Answer: **Loki**

11. Andrea del Castagno's [ahn-DRAY-uh del kah-STAHN-yoh'z] depiction of this event shows a person sleeping near its center. That work influenced Domenico Ghirlandaio's [doh-MEN-ee-koh geer-lahn-DY-oh'z] three paintings of this event. Tintoretto's [teen-toh-RET-oh'z] depiction of this event is unusual for its inclusion of secondary characters and the angle of its perspective. The most famous painting of this event is a fresco in Milan, and some people have debated whether a central figure is St. John or Mary Magdalene [MAG-duh-lin]. Name this event often depicted as taking place with Jesus in the middle of a long table, such as in Leonardo da Vinci's [VIN-chee'z] portrayal.
Answer: the **Last Supper** [or Il **Cenacolo** or L'**Ultima Cena**]

12. After Philippe Briez [fee-leep bree-ay] criticized this group, one of its members stated "He who seeks to debase, to divide, to paralyze the Convention is an enemy of the fatherland." At its peak powers, the size of this group grew from nine to twelve members. Louis Antoine de Saint-Just [loo-ee an-twahn deh sahn-zhoos] was reading to this group when he was interrupted by the Thermidorian Reaction, which caused this group to lose power. This group was at first informally called the Danton Committee. Name this group created by the National Convention that had dictator-like power and was for a time dominated by Maximilien Robespierre before he was executed and this group lost power to the Directory.
Answer: **Committee of Public Safety** [or **Committee for Public Safety** or **Comité De Salut Public**]

13. The northern part of this country contains the Ogo Mountains, which are also called the Galgodon Highlands. This country's northwesternmost administrative region—which has attempted to secede—is Awdal and contains the city of Borama [boh-RAH-muh]. That region is next to this country's second-most populous city, Hargeisa [har-GAY-suh]. The northeasternmost part of this country is Puntland, and those regions form the southern shore of the Gulf of Aden. The shape of this country explains why its region is called the "Horn of Africa". Name this country east of Kenya and Ethiopia whose capital is Mogadishu [moh-guh-DEE-shoo].
Answer: (Federal Republic of) **Somalia**

14. At the beginning of the third play in a trilogy by this writer, a woman tells her sister that she wants to bury their brother's dead body. This writer then depicts Ismene ["is-many"] refusing to help bury Polyneices [pah-lee-"NICE"-eez] because of a decree by the king. In the first play in that trilogy, which takes place while that king's brother-in-law is on the throne, this writer has the words "You yourself are the criminal you seek" spoken by the blind prophet Tiresias ["tie"-REE-see-uss]. This writer ended that play with the king gouging out his own eyes. In that play, this writer described the death of Laius ["LIE"-uss] and the events leading Jocasta [yoh-KAHSS-tuh] to unwittingly marry her son. Name this playwright of *Antigone* [an-TIG-uh-nee] and *Oedipus Rex.*
Answer: **Sophocles**

15. This person wrote about a spinning bucket of water to describe his thoughts on absolute motion. This person proved that a spherically symmetric body can be treated as though all its mass is at its center, except mass farther away than the object it is attracting. The fact that the rate of change of temperature is proportional to the difference between an object's temperature and room temperature is this person's law of cooling. The fact that every force is paired up with an equal and opposite force is this person's third law of motion. Identify this scientist who developed the law of universal gravitation and who is the namesake of the S.I. unit of force.
Answer: Isaac **Newton**

16. This person started the Manhattan Company, purportedly to improve drinking water, though it became a major bank that is the earliest predecessor firm of J. P. Morgan Chase. This person had controversial negotiations with the British Minister to the United States, Anthony Merry, and teamed up with General James Wilkinson. Wilkinson, however, contacted President Thomas Jefferson, leading to this person being arrested for treason. The Twelfth Amendment was passed after it was difficult to break a tie between this person and Thomas Jefferson. This person was Jefferson's first vice president. Name this person who, in an 1804 duel, killed Alexander Hamilton.
Answer: Aaron **Burr**

17. This vitamin is altered to produce isotretinoin ["ice"-oh-TRET-ih-noh-in], which is an acne medication. A lack of this vitamin can lead to some dryness called xerophthalmia [zair-awff-THAL-mee-uh] and additional dryness of the mucous membranes. Winter squash is a much better source of this vitamin than summer squash, and sweet potatoes are better than potatoes. This vitamin is necessary for the body to produce rhodopsin [roh-DAHP-sin], a light-sensitive receptor protein. Name this vitamin that is found in carrots, is useful for night vision, and was the first vitamin discovered.

Answer: Vitamin **A** [or **retinol**]

18. In a poem by this writer about a painting, there is "a splash quite unnoticed". That poem shares its name with Pieter Bruegel the Elder's *Landscape with the Fall of Icarus.* In another poem by this writer, he "saw the figure 5 in gold on a red firetruck". Another poem by this writer is about an object that is "glazed with rain water beside the white chickens." This poet began that work with the words "so much depends upon". Another poem by this writer ends with the stanza "Forgive me, they were delicious, so sweet, and so cold." Name this poet of "The Red Wheelbarrow" who ate the plums in "This Is Just To Say".

Answer: William Carlos **Williams**

19. Though Tom and Mark Udall [YOO-dahl] represented New Mexico and Colorado in Congress, their fathers—who are brothers—both represented this state. The "Silent Senator" Carl Hayden represented this state for 57 years. In 1960, a U.S. senator from this state wrote the book *The Conscience of a Conservative*; that senator later ran for president, saying "Extremism in the defense of liberty is no vice!". This state was the home of Barry Goldwater and of the 2008 Republican presidential nominee. Name this state whose current senators are Kyrsten Sinema ["cinema"] and Martha McSally and which was the home of John McCain.

Answer: **Arizona**

20. This substance moves through the canals of Hering. A duct named for this substance helps form the ampulla of Vater. Both the production and release of this substance is increased by the hormone cholecystokinin [KOH-luh-SISS-toh-KY-nin]. This substance reduces surface tension by acting as a surfactant, creating micelles ["my-SELLS"] that make lipase ["LIE-pace"] more efficient. Taurocholic [TOR-oh-KOH-lik] acid is in this substance and is a component of its namesake salts. This substance is produced in the liver and stored in the gallbladder. Name this substance that digests fats and which is yellowish-greenish.

Answer: **bile** [prompt on **gall**]

21. One of these entities is named for Gaspard Monge [mawnzh] and is defined by planes going through the midpoints of tetrahedron edges perpendicular to opposite edges. The first definition in Euclid's [YOO-klid'z] *Elements* is of this concept, calling it "that which has no part". Karl Wilhelm Feuerbach [FOY-ur-bahk] and Olry Terquem [ter-kem] discovered that nine of these entities related to a triangle can in turn be used to define a circle. Two of these structures define a line, and three of them define a plane if they are not co-linear. Name this geometric concept that has no length, area, or volume, and which can be a vertex of a polygon or the end of a segment.

Answer: **point**s

1. Over 99% of the mass of our solar system is in this object.

A. Name this object that is, by definition, 1 astronomical unit from Earth.

Answer: the **Sun** [accept **Sol**]

B. This thin layer at the surface of the Sun is outside the convection zone but below the chromo·sphere ["CHROME-oh-sphere"] and corona. Sunspots occur at this layer.

Answer: **photo·sphere**

C. On average, the sunspot cycle lasts this number of years.

Answer: **11** years

2. This name was shared by a ninth-century leader and a leader who was in power from 976 to 1025.

A. Give this name held by an emperor who defeated Bardas Skleros and later Bardas Phokas, and whose continued victories gave him the nickname "Bulgar-Slayer".

Answer: **Basil** (II)

B. Basil the Bulgar-Slayer led this empire that was originally the Eastern Roman Empire.

Answer: **Byzantine** Empire [accept **Byzantium**]

C. When the Byzantine Empire temporarily lost control of its capital in 1204, Theodore I Laskaris set up an empire in this city. This city was the site of a council in 325 overseen by Constantine.

Answer: **Nicaea** [ny-SEE-uh] [prompt on **Iznik**]

3. This quantity is usually measured in farads ["FAIR"-adz].

A. Name this quantity that equals charge over electric potential difference.

Answer: **capacitance**

B. Unlike resistors, when capacitors are placed in this type of arrangement in a circuit, their capacitances are *added* to get the total capacitance.

Answer: in **parallel** or **parallel** circuit

C. This name is given to the unwanted capacitance caused by two circuit elements being close to each other.

Answer: **parasitic** capacitance or **stray** capacitance

4. The narrator of this poem says that in every face he meets he sees "marks of weakness, marks of woe".

A. Name this poem in *Songs of Experience* that does not correspond to any poem in *Songs of Innocence.* It begins "I wander through each chartered street."

Answer: "**London**"

B. This poet wrote "London" as well as "The Tiger".

Answer: William **Blake**

C. In the first and last stanza of "The Tiger", what word does Blake sort of rhyme with the word "eye"?

Answer: **symmetry** [SIM-uh-try, but accept the standard pronunciation]

5. This musical is based on a comic strip by Harold Gray.

A. Name this musical about a little orphan who is taken in by "Daddy" Warbucks.

Answer: ***Annie***

B. Annie sings this optimistic song that says the title concept is "always a day away". After Annie sings this song, Franklin Roosevelt gets his Cabinet to sing it.

Answer: "**Tomorrow**"

C. In contrast, Miss Hannigan sings this song stating "Some women are dripping with diamonds; some women are dripping with pearls. Lucky me! Lucky me! Look at what I'm dripping with."

Answer: "**Little Girls**"

6. One of these "signs producing grace" is Holy Orders, which makes a person a bishop, priest, or deacon.

A. Give the collective name of these seven rites in the Catholic Church, starting with baptism.

Answer: seven **sacrament**s

B. For American Catholics, this sacrament usually occurs anywhere from the age of 7 to 16 years. This sacrament strengthens membership in the Church.

Answer: **Confirmation** [or **Chrismation**]

C. One of the current sacraments is the anointing of the sick. That sacrament used to be called by this two-word name, especially when performed on people who were dying.

Answer: **Extreme Unction** [prompt on **last rites**]

7. The characters in this novel have trouble handling the memory of their time at Sweet Home and what happened during their escape from it.

A. Name this novel set at 124 Bluestone Road in Cincinnati.

Answer: ___*Beloved*___

B. This African-American woman wrote *Beloved* as well as *The Bluest Eye* and *Tar Baby.* She died in 2019.

Answer: Toni **Morrison** [or Chloe Ann **Wofford**]

C. At one point during the novel, Sethe [SETH-uh], Beloved, and Denver laugh until they cough after Denver falls down while doing this activity.

Answer: ice **skating** [or ice **skate**; accept **glide** or **gliding**]

8. This process is sometimes equivalent to the distributive property in reverse.

A. Name this process that changes a polynomial into a product of simpler polynomials.

Answer: **factor**ing or **factor**ization [accept **factor**izing]

B. One way to factor is to find two numbers with a given sum and product. Find two numbers whose sum is 20 and whose product is 91.

Answer: **7** and **13** [either order]

C. Numbers are often broken down into prime factors. Find the power of 2 in the prime factorization of 144.

Answer: **4** [accept 2 to the **4**th power]

9. Identify these fictional places:

A. This island and nearby Blefuscu [BLEH-fuss-koo] are inhabited by little people in Jonathan Swift's *Gulliver's Travels.*

Answer: **Lilliput**

B. In an Aristophanes [air-ih-STAH-fuh-neez] play, Pisthetaerus [piss-thuh-TEE-russ] convinces the birds to build this city between people and gods.

Answer: **Cloud·cuckoo·land** [or **Nubicuculia**]

C. Hugh Conway travels to this place, where moderation is emphasized, in James Hilton's *Lost Horizon.*

Answer: **Shangri-La**

10. Answer the following about matrix multiplication:

A. If *A* and *B* are matrices, then *A* times *B* usually doesn't equal *B* times *A*. Therefore, matrix multiplication lacks what property?

Answer: **commutative** property or **commutativity**

B. Give the name for the matrix that results when a matrix is multiplied by its own inverse.

Answer: **identity** matrix [prompt on *I*]

C. Find the number in the upper left corner when the matrix with top row 3, 1 and bottom row 3, 5 [pause] is multiplied by the matrix with top row 3, 6 and bottom row 1, 9.

Answer: **10**

11. This term was originally used for works in Pompeii and comes from the Italian word for "scribble" or "scratch".

A. Give this term for artwork made without permission, often on a wall.

Answer: **graffiti** [or s**graffito**]

B. This British graffiti artist—who is known by a pseudonym—created *Slave Labor*, which depicts a child putting small British flags together, and *The Mild Mild West*, which shows a bear and riot police.

Answer: **Banksy**

C. This artist joined with Al Diaz to popularize the SAMO ["SAME-oh"] graffiti tag during the 1970s. His later acrylic works have nicknames such as *Yellow Tar and Feathers* and *Black King Catch Scorpio.*

Answer: Jean-Michel **Basquiat** [zhahn mee-shel bahss-kee-ah]

12. This quantity is evaluated using an integral of the dot product of a vector field with surface area.

A. Give this general term for a measure of how much of something, often an electric or magnetic field, passes through a surface.

Answer: **flux**

B. This SI unit of luminous flux equals one candela-steradian. One of these units per square meter is a lux.

Answer: **lumen**s

C. According to a theorem sometimes named for Carl Gauss, the total flux through a closed surface equals the total sum of this operation on the field everywhere inside the surface.

Answer: **div**ergence [prompt on "del dot" but not on "del"]

13. When this man has an affair with Anne Stanton, Anne's brother—Adam—kills him.

A. Name this fictional governor who Jack Burden goes to work for.

Answer: **Willie** **Stark** [accept either]

B. Willie Stark appears in this author's novel *All the King's Men.*

Answer: Robert Penn **Warren**

C. When Jack Burden finds out about the relationship between Stark and Stanton, he drives to this city and lies on a hotel bed.

Answer: **Long Beach**, California

14. Election to this office was described by article 1, section 3 of the Constitution, which was changed by the 17th Amendment.

A. Name this federal job that has a six-year term.

Answer: U.S. **senator**(s) [accept the U.S. **Senate**]

B. This party's Omaha Platform advocated direct election of U.S. senators. This party peaked during the 1890s.

Answer: **Populist** Party or the **Populist**s [or the **People's** Party]

C. The Populist Party supported this politician, who called for the direct election of Senators and was the Democratic Presidential Candidate in 1896, 1900, and 1908.

Answer: William Jennings **Bryan**

15. The dynamic type of this quantity can be measured in poise [pwahss], while the kinematic [ky-nuh-MAT-ik] type can be measured in stokes.

A. Name this resistance of a fluid to flow.

Answer: **viscosity** [or **viscous**ness]

B. To find the kinematic viscosity, the dynamic viscosity is divided by this quantity.

Answer: **density**

C. This adjective describes fluid flow without viscosity, which theoretically happens with ideal fluids and actually happens with superfluids.

Answer: **inviscid** [in-VISS-id] flow

16. One of this author's title characters, Indiana, is married to Colonel Delmare but is in love with Raymon de Ramiere.

A. Name this French author who also wrote *Consuelo*.

Answer: George **Sand** [zhorzh **sahnd**] [or Amantine **Dupin**]

B. Near the beginning of an extremely long work by this other author, a mother in Combray reads George Sand novels to her son.

Answer: (Valentin Louis Georges Eugène) Marcel **Proust**

C. George Sand dedicated her novel *Le Dernier Amour* to this close friend of hers who wrote *Madame Bovary*.

Answer: Gustave **Flaubert** [goo-stahv **"flow-bear"**]

17. This person organized the diamond company De Beers Consolidated Mines.

A. Name this Englishman who became the prime minister of the Cape Colony and whose will set up a scholarship to the University of Oxford.

Answer: Cecil (John) **Rhodes**

B. Rhodes was forced to resign as prime minister after this failed attack on Transvaal. At the time, Transvaal was officially called the South African Republic.

Answer: **Jameson Raid**

C. Rhodes hoped that these people, who were British residents in the Transvaal denied citizenship, would revolt, but they did not. The name for these people means "foreigners".

Answer: **uitlander**s [**"ate"-lahn-dur**z]

18. These cells connect to each other at synapses [SIN-ap-siz].

A. Name these cells of the nervous system.

Answer: **neuron**s [prompt on **nerve** cells]

B. Synapses usually go from an axon of one neuron to this projection of another neuron.

Answer: **dendrite**(s) [or **dendron**(s)]

C. This type of neuron, which is common in the retina, has exactly one axon and one dendrite.

Answer: **bipolar** neuron

19. For positive numbers, but not for negative numbers, this function is equivalent to the identity function.

A. Name this function that gives the distance along the number line between the input and 0.

Answer: **absolute value** [accept complex **modulus**]

B. For complex numbers, one way to find the absolute value, or modulus, is to take the square root of the number times this operation on the number. This operation keeps the real component the same and takes the opposite of the imaginary component.

Answer: complex **conjugate** or complex **conjugation**

C. Find the absolute value, or modulus, of 2 minus $3i$.

Answer: square **root** of **13** [accept **radical 13**; do not prompt on "13"]

20. This type of tax can be called a customs duty.

A. Give this term for a tax on imports or exports.

Answer: **tariff**(s)

B. This name is given to policies that use tariffs to shield producers from foreign competition.

Answer: **protectionism** or **protection**ist

C. This Latin phrase is used to describe tariffs whose amount is based on the value of the goods, similar to a value-added tax.

Answer: **ad valorem**