

2023 Reinstein Set – Packet 8

Tossups

1. A small genus [JEE-nus] of rheas [REE-uhz] was named after this person after he realized he was eating one rather than a young rhea. This scientist was criticized by Antoinette Blackwell both before and after he wrote “Thus man has ultimately become superior to woman.” That statement was made in a book by this writer which also stated that all races of humans belong to the same species and which made several mentions of Alfred Russel Wallace. That book by this person was *The Descent of Man*. Name this scientist who famously traveled on the HMS *Beagle* and who wrote *On the Origin of Species*, which described his theory of evolution.

Answer: Charles (Robert) **Darwin**

2. There was international coverage when this person traveled to Anchorage, Alaska in 1971 to meet with President Richard Nixon, and he followed that by meeting with leaders in Europe. An attempt to either increase this leader’s power or replace him was made during the February 26 Incident, during which this leader did not accept resignations from government officials. This leader’s Humanity Declaration, stating that he was not divine, was released on January 1, 1946. This leader was succeeded by his son, Akihito, and he was the grandson of the Meiji Emperor. Name this emperor of Japan during World War II whose reign lasted from 1926 to 1989.

Answer: (Michinomiya) **Hirohito** [or the **Showa** emperor]

3. One of the best known participants in this sport was Conchita Cintrón [kohn-CHEE-tah seen-TROHN], who was arrested in 1949 for performing this sport in a way that only men were allowed to do. In modern times, activists claim that the European Union common agricultural policy subsidizes this sport despite claims made by the European Union. In a novel, Romero performs in this sport after being beaten up by Robert after both men are interested in Lady Brett Ashley. That novel, *The Sun Also Rises*, is one of several novels by Ernest Hemingway featuring this sport. Name this sport performed by matadors or toreros against large animals.

Answer: **bullfighting** [accept **toreo** before “torero”]

4. At the end of one story by this writer, Jupiter says “You have what you asked for, so you have only yourselves to blame for your misfortunes.” Jupiter says those words in a story by this writer after sending a log and then a crane to be the king of the frogs. Another story by this writer is considered the source of the expression “sour grapes” and is about a fox who repeatedly jumps in an attempt to eat some grapes. Another story by this writer is sometimes ended with the phrase “perseverance wins” or the Biblical phrase “The race is not to the swift”, though that moral probably was written after this writer lived. Name this ancient Greek writer of “The Tortoise and the Hare” and many other fables.

Answer: **Aesop** [EE-sahp] [or **Aesopos**]

5. This artist wrote on the back of one painting “Not the least hope remains to me.” In that work, an easel is used to hold up disgusting food which has a tube connecting it to a person’s mouth. This artist painted *Without Hope* and a work showing a bird lying upside-down on a small tree, a building coming out of a volcano, and two feet at the end of a bath. Another painting by this artist includes the body of a deer with nine arrows stuck in it, and the face of the deer is actually this artist’s face. Name this Mexican painter of *What the Water Gave Me* whose many self-portraits include *The Wounded Deer*.

Answer: (Magdalena) Frida **Kahlo** (y Calderón)

6. The subject of one poem by this writer is “on the skirts of Bagley Wood” and “waiting for the spark from heaven to fall”. That was one of the two poems by this writer quoted in the **Ralph** [rayf] Vaughan Williams work *An Oxford Elegy*. Another poem by this writer describes the “grating roar of pebbles” which “begin, and cease, and then again begin.” In that poem, this person wrote that the world “Hath really neither joy, nor love, nor light, nor certitude, nor peace, nor help for pain”. This poet ended that poem “Where ignorant armies clash by night.” Name this poet who wrote “The Scholar-Gipsy” and “Dover Beach”.

Answer: Matthew **Arnold**

7. The cold-water versions of these features, such as the one near Green River, Utah, are caused by carbon dioxide. The layers that form near these features and are named for them are sometimes called **siliceous** [suh-LISH-uss] sinter. Most of these features are in the United States or on the Kamchatka Peninsula. These features differ from hot springs because these objects have eruptions that last for a few seconds to a few minutes. Name these geologic features, many of which are in Yellowstone National Park, including Old Faithful.

Answer: **geysers** [prompt on **hot springs** before “hot”]

8. A company in this novel uses the slogan “If It’s Optic White, It’s the Right White.” In this novel, that slogan is used at Lucius Brockway’s employer, Liberty Paints. After being injured at the paint factory, this novel’s protagonist asks whether the hospital director knows Mr. Norton or Dr. Bledsoe, which is a reference to the college the narrator got kicked out of. The narrator of this novel received a scholarship to that college after trying to pick up coins from an electrified rug and participating in a battle royal. Name this novel addressing African-American identity and written by Ralph Ellison.

Answer: ***Invisible Man*** [do not accept “The Invisible Man”]

9. This compound reacts with acetic [uh-SEE-tik] acid to form sodium acetate [ASS-ih-tayt], water, and carbon dioxide. Though the American Dental Association does not approve, some people use this compound in water to brush their teeth, which whitens them. Because of a marketing campaign by Arm & Hammer, it is common to put an open box of this compound in refrigerators. Name this compound of sodium, hydrogen, carbon, and oxygen that releases carbon dioxide when exposed to an acid, which is why it is commonly used as a leavening agent.

Answer: **baking soda** or **sodium bicarbonate** or **sodium hydrogen carbonate** [or **NaHCO₃**; accept **bicarbonate of soda**; do not accept “baking powder”]

10. This person was sworn in as Chief of Staff of the U.S. Army on the same day that Germany invaded Poland to start World War II. In that position, this person heavily promoted Dwight Eisenhower—who eventually succeeded him—and Operation Overlord. After the war ended, this person tried to prevent a civil war in China and then successfully organized a plan to stop communists in Greece and Turkey, which was the basis of the Truman Doctrine. This person was eventually given a Nobel Peace Prize for his work as secretary of state, especially for giving economic aid to recovering countries. Name this person known for the European Recovery Program.

Answer: George C(atlett) **Marshall** (Jr.)

11. During the last 10 days of the year, members of this religion honor the dead by celebrating **Frawardigan** [fruh-war-dee-GAHN]. The six feasts in this religion that do not happen on the new year are the **gahanbars** [guh-HAHN-barz]. When approaching adulthood, members of this religion are given a **sudreh** [SUH-druh] and **kushti** [KUSH-tee], which are a sacred shirt and cord used to remember the creed “Good Words, Good Thoughts, and Good Deeds.” The 17 hymns attributed to the founder of this religion are the **Gathas** [GAH-thuz]. Members of this religion worship Ahura Mazda and read the Avesta. Name this monotheistic religion that started in what is now Iran about 3500 years ago.

Answer: **Zoroastrianism**

12. This structure contains **polysaccharides** [“poly-SACK-uh-rides”] that are arranged into hexagonal rosettes that can spin. This structure often contains a lot of **xylan** [ZY-lan]. The primary compound in these structures is also the primary compound in cotton. The outer layer of these things contain many pectins and are called the middle **lamella** [luh-MEL-luh]. In wood and bark, these structures contain **lignin** [LIG-nin]. The ability of these structures to prevent outflow allows for the build-up of turgor pressure. Name these structures that do not exist in animals but that are the outermost part of plant cells.

Answer: **cell walls**

13. After being fired from this state’s supreme court for opposing Reconstruction, Richard Coke became its governor and one of its U.S. senators. The Iran-Contra investigation ordered by President Ronald Reagan was headed by this state’s former senator John Tower. The 1988 running mate of Michael **Dukakis** [doo-KAH-kis] was this state’s Senator Lloyd Bentsen. The Senate Majority Leader for most of the late 1950s, who was the subject of a set of biographies by Robert **Caro** [KAY-roh] and who left the Senate to become vice president, was this state’s Lyndon B. Johnson. Name this state represented in the Senate more recently by John Cornyn and Ted Cruz.

Answer: **Texas**

14. One poem by this writer states “Ill fares the land, to hastening ills a prey, where wealth accumulates, and men decay.” This writer began that poem with the words “Sweet Auburn” addressed to the title location. In a novel by this author, Mr. Jenkinson adds to the misery of the protagonist by making him think that Olivia is dead, and several of the characters are surprised to learn that Olivia’s marriage to Squire Thornhill is valid. This author wrote that novel about the bankruptcy of Charles Primrose. Name this 18th-century Anglo-Irish writer of *The Deserted Village* and *The Vicar of Wakefield*.

Answer: Oliver **Goldsmith**

15. This country is the location of Chisanga Falls, which is in the eastern part of Nyika [NEE-kuh] National Park. Some ancient history of this country's Chewa people is recorded in the Chongoni [chon-GOH-nee] Rock Art Area. This country contains the Viphya [VIFF-yuh] Mountains, which surround the city of Mzuzu [em-ZOO-zoo]. The south part of this country includes most of Lake Chilwa and the city of Blantyre [BLAN-"tire"]. The north half of this country is between Zambia and Tanzania [TAN-zuh-nee-uh], and the south half of this country is surrounded by Mozambique. The lake that shares its name with this country is also called Lake Nyasa [NY-ah-suh]. Name this country whose capital is Lilongwe [lih-LAWN-gway].

Answer: (Republic of) **Malawi** [or (Dziko la) **Malawi**]

16. In southern France, an attempt to take advantage of this process is being built, called ITER [EE-tur]. This process releases energy for elements with a lower atomic number than nickel. The magnetic confinement type of this process confines plasma in the shape of a torus by using a tokamak [TOH-kuh-mak]. This process was not used in Little Boy or Fat Man, but it is used in thermonuclear weapons, which used to be called hydrogen bombs. Two very common examples of this reaction are the CNO cycle and the proton-proton chain reaction in stars. Name this type of reaction in which two nuclei are combined.

Answer: nuclear **fusion** (reaction) [prompt on **nuclear** reaction before "Little Boy"; do not accept "fission"]

17. One poem by this writer begins "I saw him once before, as he passed by the door." That poem, which ends with the narrator hoping that people will smile if he lives as long as the poem's subject, is "The Last Leaf". Another poem by this writer states "Thanks for the heavenly message brought by thee, child of the wandering sea." This poet began the last stanza of that poem with the lines "Build thee more stately mansions, O my soul, As the swift seasons roll!". Another poem by this writer, which begins "Aye tear her tattered ensign down, Long has it waved on high", is sometimes credited for preventing a famous ship from being decommissioned. Name this poet who wrote "The Chambered Nautilus" and "Old Ironsides".

Answer: Oliver Wendell **Holmes** Sr.

18. This person was named after the tyrant of Sicyon [SISS-ee-ahn], who was his maternal grandfather. Cleomenes [klee-AH-muh-neeZ] I of Sparta helped Isagoras [“eye”-SAG-uh-russ] take control from this leader, but this leader had enough popular support to allow him to gain back power after returning from exile. This ruler replaced the four-tribe system that was based on family with a 10-tribe system based on location. According to Aristotle, this ruler instituted the Athenian policy of ostracism. This leader, who extended the democratic reforms of Solon [SOH-lun], was the great uncle of Pericles. Name this “father of Athenian democracy”.

Answer: **Cleisthenes**

19. The distance matrix named for this person has zeroes along the main diagonal and squares of differences everywhere else. The type of inner product named for this person is equivalent to the dot product. A statement called “[this person’s] lemma” or “[this person’s] theorem” states that if a prime number divides a product, then it divides at least one of the factors. Another statement called “[this person’s] theorem” is that there are infinitely many prime numbers. This person’s parallel postulate is assumed in the forms of geometry named for him. Name this ancient Greek mathematician who wrote the *Elements*.

Answer: **Euclid** [YOOK-lid] (of Alexandria)

20. This instrument is the lead instrument in a set of pieces broken down into five “Joyful Mysteries”, five “Sorrowful Mysteries”, and five “Glorious Mysteries”. Those pieces for this instrument, sometimes called the *Copper-Engraving Sonatas* or *Rosary Sonatas*, are by Heinrich Biber [BEE-bur]. Pablo de Sarasate performed on this instrument, which is not an organ, for the premiere of *Introduction and Rondo Capriccioso* [kah-pree-CHOH-zoh] by Camille Saint-Saëns [san sawn]. Sarah Chang, Hilary Hahn, and Joshua Bell primarily play this instrument. A standard string quartet has two of these instruments. Name this string instrument pitched higher than the viola.

Answer: **violin**

21. One way to evaluate this function on x is to make segments of lengths x and one, combine them to make the diameter of a circle, then drop a perpendicular from the circle to where those segments are joined. In the normal distribution function, this function is applied to 2π in the denominator. Applying this function is the last step to finding the quadratic mean or to finding the standard deviation of a set of numbers. To find the geometric mean of two numbers, apply this function to their product. The graph of this function of x is half of a rightward-opening parabola. Name this function equivalent to raising to the one-half power.

Answer: **square root** [prompt on **radical**; before “one-half”, accept raising to the **one-half power** or raising **to the one-half**; accept answers that additionally mention x]

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Bonuses

1. In this novel, Hungry Joe has nightmares, and Captain Flume is afraid to fall asleep because he is afraid of Chief White Halfcoat.

A. Name this novel whose title concept, explained by Doc Daneeka, is “Anyone who wants to get out of combat duty isn’t really crazy.”

Answer: Catch-22

B. This author wrote *Catch-22* and *Something Happened*.

Answer: Joseph **Heller**

C. In *Catch-22*, this character repeatedly increases the number of missions that men have to fly to complete a tour of duty.

Answer: Colonel (**Chuck**) Cathcart [accept either underlined name]

2. The *Dance with Goblets* takes place near the end of the first act of this ballet.

A. Name this ballet about a curse cast by Rothbart against Odette.

Answer: Swan Lake [or Lebedínoye ózero]

B. This composer wrote *Swan Lake* and *The Nutcracker*.

Answer: Pyotr Ilyich Tchaikovsky [or Peter Ilich Tchaikovsky]

C. In act III of *Swan Lake*, the female lead dancer performs 32 of these whipped leg turns. These turns are extended **pirouettes** [pir-oh-ets].

Answer: **fouettés** (rond de jamb en tournant)

3. This type of reaction almost always involves oxygen.

A. Name this type of reaction that sometimes is simply called burning.

Answer: **combustion** reaction [or **combusting**]

B. Complete combustion of hydrocarbons creates this compound and water vapor.

Answer: **carbon dioxide** [accept **C O₂**]

C. One of the formulas to find the heat of combustion is named for this scientist who worked with Alexis Thérèse **Petit** [peh-tee] on a law for molar specific heat capacity.

Answer: Pierre Louis **Dulong**

4. The beginning of this period is often dated to September 1793.

A. Name this part of the French Revolution characterized by many executions.

Answer: Reign of **Terror** [or la **Terreur**]

B. Many of the executions were caused by this group of 12 people, headed by Maximilien Robespierre [“robes-pee-air”], who was eventually executed himself.

Answer: **Committee of Public Safety** [or **Comité de salut public**]

C. This editor of the newspaper *Le Père Duchesne* [luh pair doo-shen] also supported many aspects of the Terror but ended up being executed. This supporter of dechristianization had followers who were sometimes called the Exaggerators.

Answer: **Jacques (René) Hébert** [zhahk eh-bair]

5. In this type of polygon, a segment connecting any two interior points is completely within the polygon.

A. Name this type of polygon in which all interior angles measure less than 180 degrees.

Answer: (strictly) **convex** polygon

B. What is the term for a polygon that is *not* convex?

Answer: **concave** polygon

C. Find the number of diagonals in a convex hexagon.

Answer: **nine** diagonals

6. The first of these events was instigated by Pope Urban II and established the Kingdom of Jerusalem.

A. Name this series of religious attacks by European Christians against Muslims, often focused on Jerusalem.

Answer: **Crusades**

B. This sultan was able to maintain control of Jerusalem despite being the target of the Third Crusade.

Answer: **Saladin** [accept **Salah-al-din** or **Yusuf**]

C. Saladin was the founder of this dynasty that was named after his father.

Answer: **Ayyubid** dynasty

7. This story was the subject of an opera by Engelbert Humperdinck, and it is the basis of Robert Coover's "The Gingerbread House".

A. Name this story about a brother and sister who are locked up by a witch after being abandoned in the woods.

Answer: "**Hansel and Gretel**" [or "**Hänsel und Gretel**"]

B. "Hansel and Gretel" was one of the tales collected by these German brothers.

Answer: Brothers **Grimm** [or Jacob and Wilhelm **Grimm** or (Ge)brüder **Grimm**]

C. In another Brothers Grimm story, a member of this profession kills seven flies with one blow before killing two giants and trapping a unicorn and a boar.

Answer: **tailor** [or **schneiderlein**]

8. These organs have actin and **myosin** [MY-oh-sin] filaments.

A. Name these organs exemplified by the biceps, triceps, and quadriceps.

Answer: (skeletal) **muscles**

B. This cord of tissue connects a muscle to a bone.

Answer: **tendon**(s) [prompt on **sinew**(s); do not accept "ligament"]

C. The contraction of cardiac muscles comes from this location in the right atrium of the heart that contains many pacemaker cells.

Answer: **sinoatrial node** [accept **SA node** or **sinus node**]

9. This mountain nymph was punished by Hera for protecting Zeus.

A. Name this creature who could only speak by repeating what had just been said to her.

Answer: **Echo**

B. Echo fell in love with this hunter who loved himself.

Answer: **Narcissus**

C. Mountain nymphs like Echo were called **Oreads** [OR-ee-adz]. Some of their siblings, including **Silenus** [sie-LEE-nus] and **Marsyas** [MAR-see-uss], were these creatures.

Answer: **satyrs** [SAY-turz]

10. The bronze statue of this person by **Andrea del Verrocchio** [ahn-DRAY-uh del veh-ROH-kee-oh] has an accompanying head of Goliath.

A. Name this character who was also sculpted by Michelangelo holding his slingshot.

Answer: **David**

B. This Florentine artist sculpted a bronze David that is nude except for the helmet and boots.

Answer: **Donatello** [doh-nah-TELL-oh] [or Donato di Niccolò di Betto **Bardi**]

C. Donatello made a statue of this hero that used to be situated over a **bas-relief** [bah “relief”] by Donatello showing this same person freeing a princess by fighting with his lance.

Answer: Saint **George** (of Lydda)

11. In this novel, Mustapha Mond is the Resident World Controller for Western Europe.

A. Name this novel that begins at the Central London Hatchery and Conditioning Center.

Answer: ***Brave New World***

B. This author wrote *Brave New World* and *Island*.

Answer: Aldous (Leonard) **Huxley**

C. In *Brave New World*, contraceptive practices are referred to as a “belt” or “drill” named for which real-life person?

Answer: Thomas (Robert) **Malthus** [prompt on **Malthusian**]

12. The first version of this group started in Pulaski, Tennessee, on December 24, 1865.

A. Name this organization that violently opposed Reconstruction and supported white supremacy.

Answer: **Ku Klux Klan** [accept **KKK**]

B. This Confederate general was the first Grand Wizard of the Ku Klux Klan. In 2021, his bust was removed from the Tennessee state capitol.

Answer: Nathan Bedford **Forrest**

C. Forrest was criticized for a massacre of African–American soldiers just after this 1864 battle in Tennessee.

Answer: Battle of **Fort Pillow**

13. Dental offices that administer anesthesia or sedation must have at least one of these devices, and horse racing facilities must have at least two.

A. Name these portable devices that can be used on people in cardiac arrest.

Answer: **AEDs** or **automated external defibrillators** [prompt on **defibrillators**]

B. Many AEDs store information and can give an output equivalent to this test of a heart's electrical activity.

Answer: **EKG(s)** or **electrocardiogram(s)** [accept **ECG(s)**]

C. An AED is often used to treat this condition consisting of a very fast heartrate.

Answer: (ventricular) **tachycardia** ["tack"-ih-KAR-dee-uh] [prompt on V-**tach**]

14. In this novel, Mr. Luttrell shoots his dog and swims out to sea.

A. Name this novel in which Pierre dies when the house at **Coulibri** [koo-lee-bree] Estate is burned down.

Answer: ***Wide Sargasso Sea***

B. This author wrote *Wide Sargasso Sea*.

Answer: Jean **Rhys** [reess] [or Ella Gwendolyn Rees **Williams**]

C. Give the eventual married first and last name of Antoinette Cosway.

Answer: ***Bertha Rochester***

15. In the decimal system, 10 has this role.

A. Give this term for the number of distinct digits in a number notation system. Its powers are used to determine place values.

Answer: **base** or **radix**

B. What is the name of the base 16 system?

Answer: **hexadecimal** system [prompt on **hex**]

C. Convert the number "one zero three" from hexadecimal to decimal.

Answer: **259**

16. Answer the following about laws designed to help women:

A. This numbered title within the Education Amendments of 1972 forbids discrimination in institutions that receive government aid. This title is often applied to funding for athletics.

Answer: Title **9**

B. This law, passed in 1994, includes a rape shield law and help for people forced out of their homes due to stalking.

Answer: **Violence Against Women** Act or **VAWA**

C. This person is the namesake of a 2009 Fair Pay Act that extends the statute of limitations for equal-pay lawsuits.

Answer: Lilly (**McDaniel**) **Ledbetter** [accept either underlined name]

17. After Republicans won every presidential election from 1860 to 1880, this Democrat won the election of 1884.

A. Name this only president to serve two non-consecutive terms.

Answer: (Stephen) Grover **Cleveland**

B. Cleveland used the U.S. Army to stop a combined strike, boycott, and blockade by the American Railway Union against this company.

Answer: **Pullman** Company

C. Cleveland lowered tariffs by signing the Revenue Act of 1894, which is commonly named for these two Congresspeople.

Answer: William L(yne) **Wilson** and Arthur P(ue) **Gorman** [either order; accept **Wilson–Gorman** Tariff]

18. Like **gluons** [**“GLUE”-ahnz**], these particles carry color charge.

A. Name this type of elementary particle whose flavors are up, down, charm, strange, top, and bottom.

Answer: **quarks**

B. These particles have an equal number of quarks and anti-quarks. They usually have one of each.

Answer: **mesons** [**MEH-zahnz**]

C. List the three color charges.

Answer: **red**, **green**, and **blue** [any order]

19. Graphing the equation “ x squared minus y squared equals zero” produces a shape that can be interpreted as this type of conic section.

A. Give this adjective used to describe cases that are much simpler than normal cases.

Answer: **degenerate**

B. The graph of “ x squared minus y squared equals zero” most nearly resembles what letter of the English alphabet?

Answer: **x** [accept answers that additionally specify either case]

C. Find the slope of either part of the degenerate hyperbola made by graphing “ x squared minus 4 y squared equals zero”.

Answer: (plus and/or minus) **1/2** [or (plus and/or minus) **0.5**]

20. These particles were observed in the Rossi–Hall experiment in 1940 and the Frisch–Smith experiment in 1962, which were tests of relativistic time dilation.

A. Name these particles that have a mean lifetime of 2.2 microseconds.

Answer: **muons** [**MYOO-ahnz**]

B. Muons are 207 times more massive than these particles but otherwise very similar to them.

J. J. Thomson is credited with discovering these negatively charged particles by showing that cathode rays consist of them.

Answer: **electrons**

C. Muons, electrons, taus, and their neutrinos are all classified as this type of particle.

Answer: **leptons**