

2023 Reinstein Set – Packet 3

Tossups

1. The Steiner **inellipse** [“in-ellipse”] is sometimes named for these things because it is defined by its relationship to these things. On a quadrilateral, joining these things creates a **Varignon** [vah-reen-yawn] parallelogram. Two chords of a circle are drawn through one of these things on another chord in the butterfly theorem, whose conclusion is about one of these things. The median of a triangle, unlike other **cevians** [CHAY-vee-unz], connects a vertex to one of these points. A formula named for this point finds the averages of both the x -coordinates and y -coordinates of two points. Name this point that is halfway between the two ends of a line segment.

Answer: **midpoint**(s)

2. This person chaired the Pageantry Committee during the Squaw Valley 1960 Winter Olympics. To assist the U.S. war effort during World War II, this person produced a film whose name was originally *In Nutzy Land*, but it was changed to *Der Fuehrer's Face*. This person's death in 1966 delayed the creation of the Experimental Prototype Community of Tomorrow. This person oversaw several displays at the 1964 New York World's Fair that used Audio-Animatronics. This person put one of his major projects in Anaheim, California and another in Lake Buena Vista, Florida. Name this person whose company created many animated characters, including Mickey Mouse.

Answer: Walt(er Elias) **Disney**

3. An adduct of this molecule is more likely in the presence of the protein p53. Parts of this molecule can be identified by a Southern blot. When it is formed, this molecule has a replication fork on which the lagging strand gets Okazaki fragments. **Thymine** [“THIGH-mean”] is one of this molecule's four bases. Raymond Gosling was a student under Rosalind Franklin when he took an X-ray diffraction image of this molecule, which was used to develop an understanding of its structure that earned a Nobel Prize for Maurice Wilkins, Francis Crick, and James Watson. Name this double-stranded molecule in chromosomes that contains genetic information.

Answer: **DNA** [or **deoxyribonucleic acid**]

4. In this novel, a group of six men is told “If any man ill-treats you we shall come to your rescue, but we will not allow you to ill-treat others.” That statement is made after the six men are handcuffed, and the men do not eat for days afterwards. Those six men in this novel are told to pay a fine of 250 bags of cowries because a church was destroyed. The protagonist of this novel is disappointed because he wants his village to fight against missionaries. Name this novel set mostly in **Umuofia** [oo-MOH-fee-uh] in Nigeria that is about **Okonkwo** [oe-KON-kwoe] and was written by Chinua **Achebe** [uh-CHEH-bay].

Answer: ***Things Fall Apart***

5. This ruler appointed Nicholas Throckmorton as the ambassador to France but later ordered the execution of Nicholas’s nephew, Francis Throckmorton. Another ambassador to France under this leader was the so-called “spymaster” Francis Wallingham. This leader was the last monarch from the House of Tudor, leading to the House of Stuart under James I. This leader gave the Speech to the Troops at Tilbury shortly before a very successful defense was made by Charles Howard and Francis Drake against the Spanish Armada. Name this monarch who succeeded “Bloody Mary”, her half-sister.

Answer: **Elizabeth I** [prompt on **Elizabeth** or the **Virgin Queen** or **Bess**]

6. If the cosmic microwave background fits a perfect thermal curve, as appears to be the case, then these things do not decay into smaller particles. These things decay into an electron and a positron in a common example of pair production. Along with **gluons** [“GLUE”-ahnz], **W bosons** [BOH-zahnz], and **Z bosons**, these things are gauge bosons. These things are created when electrons drop to a lower energy state. These things are the discrete wave-packets hypothesized by Albert Einstein in his explanation of the photoelectric effect. These things are the force carrier for the electromagnetic force. Name these quanta of light.

Answer: **photons**

7. This composer’s aria “Nature immense, **impénétrable et fière** [em-pen-uh-trahb-luh ay fyer]” is performed after “D’amour l’ardente flamme”, which is sung by Marguerite. This composer ended that opera with Marguerite going to heaven and the man she loved going to hell. A symphony by this composer was written for Niccolò Paganini to perform on viola, but Paganini did not like it. That piece by this composer includes “March of the Pilgrims” and was based on a poem by Lord Byron. Movements in another work by this composer include “Scene in the Fields” and “March to the Scaffold”. Name this French composer of *The Damnation of Faust*, *Harold in Italy*, and *Symphonie fantastique*.

Answer: (Louis-)Hector **Berlioz**

8. James Stevens collected many stories about this character that also mention the accountant Johnny Inkslinger, whose pen was connected by a hose to a bottle of ink. When another character dropped a lot of peas, this character prevented the food from being lost by making pea soup. This person's cook skated along the top of a stove by strapping hams to his feet. This character was credited for creating the **Puget [PYOO-jet]** Sound by digging **[pause]** and for creating the Grand Canyon by dragging his axe. Name this giant lumberjack in American folklore who was accompanied by Babe the Blue Ox.

Answer: **Paul Bunyan** [accept either]

9. A short poem by this writer ends with the wish "May God provide another who will love you." That poem by this author begins "I loved you; and perhaps I love you still." A patriotic poem by this writer begins with the question "Why rave ye, babblers, ye lords of popular wonder?". In another poem by this writer, a man loses his mind when **Parasha's [PAH-ruh-shah'z]** home is destroyed by a flood. This writer wrote that poem about Yevgeny. Most of that poem by this author praises the city of Saint Petersburg, and it includes a statue coming to life. Name this poet who wrote "To the Slanderers of Russia" and *The Bronze Horseman*.

Answer: Alexander **Pushkin** (The first poem mentioned is "I Loved You", or "Ya vas lyubil".)

10. After working as a Chester Bowles Asian Fellow in India, this person disrupted World Youth Festivals while working indirectly for the CIA. This person then wrote "A Bunny's Tale", which was a magazine article about working for Playboy. Another prominent article by this person was "After Black Power, Women's Liberation". This person said of one of her successful ventures, "I realized as a journalist that there really was nothing for women to read that was controlled by women." That venture by this person was initially a one-off insert in *New York* magazine. Name this feminist who started *Ms.* magazine.

Answer: Gloria (Marie) **Steinem**

11. This disease is treated with **isoniazid** [“eye”-soh-NY-uh-zid]. Like leprosy, this disease can be prevented by the **Bacillus** [buh-SILL-uss] Calmette–Guérin [gay-ran] vaccine and is caused by mycobacteria. Before the COVID epidemic, this disease was responsible for more deaths internationally than any other infectious disease. The **Mantoux** [man-too] test for this disease puts proteins into some skin on the patient’s arm and then sees whether the body responds within three days. This communicable disease can be seen as nodules and cavities on lung X-rays, and it causes coughing with bloody mucus. Name this disease that used to be called consumption.

Answer: **tuberculosis** [accept **TB**; prompt on **consumption** before it is mentioned]

12. Since 2018, attempts to control the cost of this program have included BPCI Advanced, which is a bundled payment system. The CHIP Reauthorization Act of 2015 included the Permanent Doc Fix change to this program. Some people are able to pay for fitness memberships by going through this program’s Advantage program, which allows people to receive the benefits of this program through a private company. Since 2006, this program’s Part D has covered many self-administered prescription drugs. Name this program that primarily provides health insurance to senior citizens.

Answer: **Medicare** [do not accept “Medicaid”]

13. This scientist’s wife, Marie Anne Paulze, translated several works from English for him and made drawings that helped popularize his work. This person studied the masses involved in the burning of phosphorus and sulfur. This person wrote “Nothing is lost, nothing is created, everything is transformed”, which is a statement of the conservation of mass, which he demonstrated. This chemist’s demonstrations of the importance of oxygen played a major role in disproving **phlogiston** [floh-JISS-tun] theory. Name this scientist who was guillotined during the French Revolution and is sometimes called the father of modern chemistry.

Answer: **Antoine(-Laurent de) Lavoisier** [an-twahn lah-vwah-zee-ay]

14. One work by this artist shows a truncated triangular **trapezohedron** [truh-PEE-zoh-HEE-drun] to the left of a ladder and winged child. The main character in that work by this artist is a winged woman in the lower right corner, whose head rests in her hand. In another work by this artist, one of the characters is a corpse holding up an hourglass and riding a horse. Another character in the same work by this artist has a goat’s head. Those works are *Melencolia I* and *Knight, Death and the Devil*. Name this early 16th-century German painter and printmaker who made several engravings.

Answer: Albrecht **Dürer**

15. One poem by this writer ends with the line “Till human voices wake us, and we drown.” Earlier in the same poem, this poet asks both “Do I dare disturb the universe?” and “Do I dare to eat a peach?”. Another poem by this writer has the second line “We are the stuffed men.” This poet ended that work “This is the way the world ends, not with a bang but a whimper.” Another poem by this writer was reduced in size based on suggestions by Ezra Pound. That poem’s first section, *The Burial of the Dead*, begins “April is the cruellest month.” Name this poet who wrote “The Love Song of J. Alfred Prufrock”, “The Hollow Men”, and “The Waste Land”.

Answer: T(homas) S(tearns) **Eliot**

16. Based on his early war experiences, this person wrote the tactical book *Infantry Attacks*. This person often worked closely with Italo Gariboldi, who supported this person during Operation Sunflower. American Lloyd Fredendall [FREH-dun-dahl] was relieved from his command after being soundly defeated by this field marshal at the Battle of Kasserine [KASS-uh-rin] Pass. This person eventually committed suicide via cyanide pill to avoid a public trial following the 20 July plot. After the war, German writers promoted the reputation of the Wehrmacht [VAIR-mahkt] by pointing to this person’s opposition to Adolf Hitler. Name this Nazi Germany Army leader known as “the Desert Fox”.

Answer: (Johannes) Erwin (Eugen) **Rommel**

17. This crop is used to make the protein zein [ZEE-in], which is used in confectioner’s glaze. This crop is not citrus, but it and molasses are the primary industrial sources of citric acid. A genetically modified version of this crop, which was only approved for animal feed but found in human food, was called Starlink. This crop is used to make the additive in E10 gasoline, which is called this crop’s ethanol. This crop is Illinois’ top agricultural commodity. A combine that harvests this crop collects the ears but not the stalks, and it then separates the husks, kernels, and cob. Name this crop also known as maize.

Answer: **corn** [accept **maize** before the end]

18. One novel by this author begins with Justice Wargrave thinking about the rumors about Indian Island. In that novel, this author then describes several guests arriving, but not the hosts, Ulick Norman Owen and Una Nancy Owen. In another novel by this author, Evelyn Howard and Alfred Inglethorp pretend to be enemies. That novel by this author takes an unexpected turn after Alfred seemingly wants to get arrested. This author also wrote a very long-running play that ends with the audience being asked to not reveal the ending. Name this author of *And Then There Were None* who introduced **Hercule Poirot** [air-kyool pwah-roh] in *The Mysterious Affair at Styles* and wrote *The Mousetrap*.

Answer: Agatha (Mary Clarissa) Christie (Miller, Lady Mallowan) [accept any underlined name]

19. The impedance of these circuit elements varies inversely with frequency. If one of these elements is placed in a direct-current circuit, then the current of the circuit will decay exponentially. Putting these elements in parallel can be described by a similar equation to the one for resistors in series, and vice versa. The strength of these elements can be increased by using a **dielectric** ["die-electric"] and is measured in **farads** [FAIR-adz]. In a circuit diagram, this element is represented by two congruent parallel segments. Name this element that stores electrical energy, often using two parallel plates.

Answer: capacitors

20. This city was the site of the Massacre of the Citadel, which allowed Muhammad Ali to end the influence of the Mamluk Sultanate. The Palestine Liberation Organization was created in this city in 1964; the meetings took place in this city because it is the headquarters of the Arab League. Members of the group Islamic Jihad assassinated Anwar **Sadat** [suh-DAHT] in this city. In 2011, protests in this city's **Tahrir** [TAH-reer] Square led to the resignation of Hosni **Mubarak** [moo-BAR-uk], who led the country of which this city is the capital. This city is next to the ancient cities of **Heliopolis** [hee-lee-AH-puh-liss], Memphis, and **Giza** [GHEE-zuh]. Name this city that is the capital of Egypt.

Answer: Cairo, Egypt

21. If this operation is performed on the first n positive integers, the sum of the results is n squared times the quantity n plus 1 squared over 4. If this operation is performed on both x and y and the results are added, the sum equals x plus y , end quantity, times the quantity x squared minus xy plus y squared. The derivative of this operation on x equals $3x$ squared. Name this operation that is performed to the variable in a polynomial of degree 3.

Answer: **cubing** [accept **cubed** or **raised to the 3rd power** or raised to the **3rd power**, including with verb forms of “raise(d)”; accept answers that additionally specify n or x]