

2018 Reinstein Set – Packet 8

Tossups

1. A stack of balls named for this person goes from large heavy ones on the bottom to light ones on the top and are known as his “cannon”. This person’s *Dialogue Concerning the Two Chief World Systems* included the first conception of relativity. The thermometer named for this person contains several containers that rise or drop based on the temperature. This person used a telescope with two lenses to observe the Moon’s craters and Jupiter’s moons. Name this Italian scientist who supposedly showed that an object’s acceleration while falling doesn’t depend on its mass [pause] by dropping cannonballs from the Leaning Tower of Pisa.

Answer: **Galileo Galilei** [accept either]

2. A speaker in this collection asks “Each morn a thousand roses brings, you say; / Yes, but where leaves the rose of yesterday?”. A character in this collection who “from that bowl has pour’d / millions of bubbles like us” is the cupbearer Saki. This collection warns that neither “piety nor wit” cannot “cancel half a line” written by the “moving finger”, which “having writ / moves on.” This poem was translated by Edward FitzGerald from Persian sources. The speaker of this collection shares “a jug of wine, a loaf of bread” with Thou. Identify this collection in 101 quatrains written by Omar Khayyam [ky-YAHM].

Answer: The *Rubáiyát* [roo-BY-ut] of Omar Khayyam

3. This person and Wilma Mankiller wrote *Every Day Is a Good Day*, and this person discussed Mankiller in the memoir *My Life on the Road*. This person stated “This is no simple reform” in her “Address to the Women of America”. This person now says that she regrets working as a Playboy Bunny to write an exposé. This person claims that her selection as the National Women’s Political Caucus spokeswoman made Betty Friedan [frih-DAN] jealous. Name this feminist who, along with Dorothy Pittman Hughes, started the magazine *Ms*.

Answer: Gloria (Marie) **Steinem**

4. This key signature is used in Cécile Chaminade’s [seh-seel shah-mih-nahd’z] Flute *Concertino* [“con-chair-TEE-no”]. This key signature used to be considered the “key of glory”, which may explain why George Frideric Handel’s *Zadok the Priest* and “Hallelujah” chorus are in this key. This is the key signature of the only Violin Concerto by Pyotr Tchaikovsky, and of Pachelbel’s Canon. The tonic chord in this key is the root, F sharp, and A. Name this major key signature that has the same notes as B minor, with its two sharps at F-sharp and C-sharp.

Answer: **D major** [accept just **D** after “major”; prompt on **D** before that]

5. After seeing the effects of torture in this country, **Frantz Fanon** [frahts fah-naw] joined its National Liberation Front. This country gained independence from the Évian Accords, after which many Muslims known as *harkis* who had supported Europeans were slaughtered. The popularity of the Islamic Salvation Front in this country led to a brutal civil war in the 1990s that ended with the rise of **Abdelaziz Bouteflika** [abd-ah-zeez boot-flee-kah]. This country's first president was Ahmed Ben Bella. Name this country in northern Africa which from 1954 to 1962 fought for independence from France.

Answer: (People's Democratic Republic of) **Algeria** [or al-Jumhuriyah al-**Jaza'iriyah** ad-Dimuqratiyah ash-Sha'biyah]

6. One of the first uses of chemical weapons was the release of this element by the Germans at the Second Battle of **Ypres** [EE-pruh]. Nitric acid and an acid with this element combine to form aqua **regia** [REH-jee-uh], and the same acid is in gastric acid along with other molecules containing this element. This element combines with fluorine and carbon to form refrigerants that deplete the ozone layer. This element is between fluorine and **bromine** [BROH-meen] in the periodic table's halogens column. Name this element whose compound with sodium is table salt.

Answer: **chlorine** [do not accept or prompt on "chloride"]

7. In one park in this state, tourists are driven in a fleet of Red Jammers. This state is home to a rock formation that William Clark signed in 1806, called Pompeys Pillar. A prehistoric lake known for periodic flooding and the Bitterroot Mountain Range are in this state's west, where the Missouri River begins before flowing through the city of Great Falls. This former location of Lake **Missoula** [mih-ZOO-luh] contains Roosevelt Arch, the northern entry to Yellowstone National Park, and all of Glacier National Park. Name this American state whose most populous city is Billings.

Answer: **Montana**

8. This architect's Doctor Chau Chak Wing Building was introduced as "the most beautiful squashed brown paper bag I've ever seen" by Australia's governor-general. Because the funder agreed to support research into Huntington's disease, this architect agreed to design the Cleveland Clinic Lou **Ruvo** [ROO-voh] Center for Brain Health in Las Vegas. This architect was credited for boosting the **Basque** ["bask"] economy after he designed the **Guggenheim** [GOOG-gun-hym] Museum in **Bilbao** [bil-BAO]. Name this architect who designed Seattle's Experience Music Project and Los Angeles' Walt Disney Concert Hall.

Answer: Frank **Gehry** [or Frank Owen **Goldberg**]

9. The most recent people to have died while holding this position are Thomas Hendricks, Garret Hobart, and James Sherman. Harry Truman complained that this job consisted of attending “weddings and funerals”. Richard Nixon was a candidate for this position when he gave the “Checkers” speech. After being charged with bribery and pleading no contest for failing to report income in 1967, Spiro Agnew resigned from this position. The person with this job can cast tiebreaking votes in the Senate. Name this position that is first in the line of presidential succession.
Answer: **Vice President** of the United States [accept **VP** or **Veep**]

10. Many of the males in this class of animals have a **cymbium** [SIM-bee-um] on their palpal bulbs. Some organisms in this class can cause **latrodectism** [lat-roh-DEK-tizm], which involves extreme sweating. Many organisms in this class breathe using a series of thin plates on their **opisthosoma** [uh-PISS-thuh-SOH-muh] called book lungs. Like horseshoe crabs, this class of animals is in the **Chelicerata** [keh-LISS-uh-RAH-tuh] subphylum. These animals generally eat by spreading digestive juices onto their prey. This class includes mites, scorpions, ticks, and harvestmen. Name this class of arthropods whose members have eight legs, among which are spiders.
Answer: **arachnids** or **Arachnida** [prompt on **spiders** before the end]

11. The Mayan god **Chaac** [chahk] used these objects made from jade to produce thunder and rain. In Chinese myth, **Pangu** [pan-goo] used one of these objects to separate yin and yang. Hephaestus used one of these objects to help Athena be born from Zeus’ head. According to American legend, one of these objects was dragged to create the Grand Canyon. In the same legend, Babe the Blue Ox is the same height as 42 of the handles of these objects. Name this object that was carried by Paul Bunyan, who was a lumberjack.
Answer: **axe** [accept more specific answers]

12. This country’s independence was declared in 1822 by the son of the king they declared independence from. Soon after that, this country lost land in the **Cisplatine** [sis-PLAH-teen] War. After heading a coup in 1889, **Manuel Deodoro da Fonseca** [mah-noo-EL deh-oh-DAW-roo dah faw-SEH-kah] became this country’s first president. Before that, this country was led by two emperors named Pedro. To Europeans, the discoverer of this country is Pedro Álvares Cabral. Name this country that was once controlled by Portugal and is the largest country, by population and area, in South America.
Answer: (Federative Republic of) **Brazil** [or (República Federativa do) **Brasil**]

13. This author created a character who describes life as “spend[ing] and wast[ing] time as though you had a million years.” In one novel by this author, the Viceroy forces an actress to apologize for improvising insults to **Doña Maria** [dohn-yah mar-EE-ah]. This writer created the alcoholic choir director Simon Stimson and wrote a novel in which five people connected to **Camila Perichole** [kah-MEE-lah pair-ih-CHOH-lay] die in a Peruvian bridge collapse that Brother Juniper investigates. In a play by this author, Emily Webb relives her twelfth birthday in Grover’s Corners, New Hampshire. Name this author of *The Bridge of San Luis Rey* and *Our Town*.

Answer: Thornton (Niven) **Wilder**

14. The Klein group with this many elements is the smallest non-cyclic group. This is the highest degree for which all polynomials can be solved exactly in terms of radicals, according to the **Abel-Ruffini** [AH-bul roo-FEE-nee] theorem. The Platonic solid with the fewest vertices and faces has this many vertices and faces, and is called the tetrahedron. Two intersecting lines divide the plane into this many different regions. Give this number that is the smallest positive even square, and the smallest composite number.

Answer: **four**

15. When **Amanullah** [am-ah-NOO-lah] Khan fled this country, he left his brother in charge, but the brother quit after three days, saying he never wanted to be king. After ruling this country for 40 years, Mohammed Zahir Shah was overthrown by his cousin. At the end of 1979, the Soviet Union put Babrak Karmal in charge of this country at the beginning of an invasion that caused the United States to boycott the Olympics. The United States invaded this country in Operation Enduring Freedom about a month after 9/11. Name this country where Hamid Karzai took over when the Taliban was driven back.

Answer: (Islamic Republic of) **Afghanistan** [or Jomhuri-ye Eslami-ye **Afghanistan**]

16. The narrator of this work returned to his father his “inheritance” of a knife and spoon. The narrator of this work tells Stein of Antwerp that his wife **Reizel** [“RYE”-zel] was good despite not having heard from her in years. In this work, the people of Sighet ignore the warnings of Moshe the Beadle. The narrator of this book works counting things for Franek after passing selection by Dr. **Mengele** [MEN-guh-luh]. The narrator’s father dies after a mass march to **Gleiwitz** [GLY-vits] and being shipped by train to **Buchenwald** [BOO-ken-vahlt]. Name this memoir about time in **Auschwitz** [“OW”-shvits], written by **Elie Wiesel** [EL-ee vee-SEL].

Answer: **Night** [or *La Nuit* or *And the World Remained Silent* or *Un di velt hot geshvign*]

17. String musicians sometimes harden their fingertips with a substance of this type that is particularly fast-acting, **cyanoacrylate** [“SIGH”-uh-noh-AK-rih-“late”]. Another one of these substances comes in two parts—hardener and resin—that the user must mix, and is called epoxy. Yet other versions of this kind of substance are made from plant **mucilage** [MYOO-sih-luj] or from the hides of animals like horses. Name this type of substance that can be spread on two materials to stick them together.

Answer: **glues** [prompt on **adhesives**] (Cyanoacrylate is the generic name for Super Glue.)

18. A **phylum** [“FIE”-lum] of animals named for this division of plants because of their similar appearance forms colonies and has **ciliated** [SIL-ee-ay-tid] tentacles around its mouth called **lophophores** [“LOAF”-oh-forz]. Many common names of **lycopodia** [“lie”-koh-POH-dee-uh] are due to their resemblance to these plants. A type of this plant once used in pillows is called *Hypnum*, which is now often marketed as the “sheet” type of these plants. A genus called **Sphagnum** [S’FAG-num] in this division is important in the creation of peat. Like algae, these plants have **rhizoids** [“RYE”-zoydz] instead of roots. **Bryophytes** [BRY-oh-“fights”] comprise liverworts, hornworts, and what division of non-vascular plants that can grow on rocks or tree bark?

Answer: **mosses** [prompt on **bryophytes** or **Bryophyta** before “Bryophytes”]

19. A jailer in this novel exclaims, “What the Devil! How many more of them!”. The prisoner he is given is assigned to solitary confinement in a cell that is “five paces by four and a half” in La Force. In this novel, that character changes his name from **Evrémonde** [ev-reh-mawnd]. Another character in this novel obsessively makes shoes, a habit he picked up when he was imprisoned in the Bastille. The names of people to be killed in the Reign of Terror in this novel are knitted by Madame Defarge. Name this Charles Dickens novel whose title contrasts London and Paris and which begins “It was the best of times, it was the worst of times.”

Answer: *A Tale of Two Cities*

20. The formation and evolution of these things is a major subject of the Great Observatories Origins Deep Survey. The largest known structures of the universe are known as filaments of these things. In space, places where none of these things exist are called voids. The Hubble Sequence is a method of classifying these things using the symbols “E”, “S”, and “SB”. A quasar is an active one of these things in its early stages of formation. The one of these things that we live in is about 100,000 light-years across. Name these collections of stars such as the Andromeda and the Milky Way.

Answer: **galaxy/ies**

21. Give the most specific answer that is true for all the clues. This shape can be graphed as “the absolute value of x plus the absolute value of y equals a constant”. If a circle is circumscribed about this shape, the circle’s area equals this shape’s area times pi over 2. All shapes of this type are similar to each other. This shape is a rhombus with congruent diagonals, and it is a rectangle with perpendicular diagonals. Its area equals its side length raised to the second power. Name this regular quadrilateral that has four congruent sides and four right angles.

Answer: **square**

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Bonuses

1. The title character in this novel fights Brian de Bois-Guilbert [duh bwah gil-bair] in Rebecca's trial-by-combat for witchcraft.

A. Name this novel in which the title character, the son of Cedric of Rotherwood, falls in love with Lady Rowena.

Answer: *Ivanhoe*

B. This Scottish author wrote *Ivanhoe*.

Answer: (Sir) Walter **Scott**

C. Scott also wrote this narrative poem about James Fitz-James, who is King James V of Scotland in disguise. A song in this poem became the song "Hail to the Chief".

Answer: *The Lady of the Lake*

2. In this type of wave, the wave oscillates in a direction perpendicular to the direction it travels in.

A. Name this type of wave contrasted with longitudinal [lawn-jih-TOOD-in-ul] waves.

Answer: **transverse** waves [prompt on **T**-waves]

B. In this phenomenon, transverse waves vibrate in a single plane. Photographers often use filters that force light to behave this way.

Answer: **polarization** or **polarized** or **polarizing**

C. Polarization can be specified using parameters named for this person. A theorem named for this person is a generalization of the fundamental theorem of calculus that equates the curl of a field over a surface to the work done by the field along the boundary.

Answer: (Sir) George (Gabriel) **Stokes**

3. This country now consists of 26 cantons, though it has previously had eight or 13 cantons.

A. Name this European country that has maintained its neutrality since 1815.

Answer: **Switzerland** [or **Swiss Confederation** or **Schweiz** or **Schweizerische Eidgenossenschaft** or Confederation **Suisse** or Confederazione **Svizzera** or Confederaziun **Svizra**]

B. Swiss neutrality was informally established at this 1815 meeting of European powers before being formalized in the 1815 Treaty of Paris.

Answer: **Congress of Vienna** [or **Wiener Kongress**]

C. This Swiss businessman shared the first Nobel Peace Prize with Frédéric Passy [fred-eh-rik pah-see] for starting the International Committee of the Red Cross.

Answer: (Jean-)Henri **Dunant** [awn-ree doo-nawn]

4. This poet claimed to “sound [his] barbaric yawp over the roofs of the world”.

A. Name this American poet who wrote “Song of Myself” and “O Captain! My Captain!”.

Answer: Walt(er) **Whitman**

B. In “Song of Myself”, the writer ponders a child questioning “what is” this substance before deciding it is the “beautiful uncut hair of graves”. In a Carl Sandburg poem, this substance states “I cover all.”

Answer: **grass**

C. In the second-to-last section of “Song of Myself”, Whitman acknowledges his self-contradictions, stating, “I am large. I contain” this word.

Answer: **multitudes**

5. The land that became this state was purchased for about seven million dollars in 1867.

A. Name this state whose purchase was nicknamed “Seward’s Folly”.

Answer: **Alaska**

B. William Seward held this position when he negotiated the purchase of Alaska.

Answer: U.S. **Secretary of State**

C. This Alaskan city was started soon after the so-called “Three Lucky Swedes” found gold near Anvil Creek in 1898, a few years after Dawson City was built up during the Klondike Gold Rush.

Answer: **Nome**, Alaska

6. This quantity is a simplistic measure of the spread of data.

A. Identify this quantity equal to the largest number minus the smallest number of a data set.

Answer: **range**

B. This other measure of spread equals the third quartile minus the first quartile.

Answer: **interquartile range** [accept **IQR**]

C. Assuming that there are a lot of distinct numbers in a set, this is the percentage of data that fall between the first quartile and the third quartile.

Answer: **50%** [accept one-**half**]

7. This character “sang his didn’t and danced his did”.

A. Identify this character whose wife “laughed his joy” and “cried his grief” in a poem about his “pretty how town.”

Answer: **anyone**

B. “anyone lived in a pretty how town” is a work by this poet of “i sing of Olaf glad and big” who used irregular punctuation and capitalization.

Answer: E(dward) E(stlin) **Cummings**

C. In “since feeling is first”, Cummings wrote that this concept “is no parenthesis.” In “Buffalo Bill’s”, Cummings asks the personification of this concept “how do you like your blue-eyed boy?”

Answer: **death** or **Mister Death**

8. For the graph of a quadratic function, this is the point at which the tangent line is horizontal.

A. Name this feature of a shape. For an upward-facing parabola it is a minimum, and for a downward-facing parabola it is a maximum.

Answer: **vertex** [or **vertices**; prompt on **extreme** or **extremum** or **extrema**, possibly preceded by “relative”]

B. Find the x -coordinate of the vertex of the parabola generated by the equation y equals x squared minus $4x$ plus 5 .

Answer: $x = \underline{2}$

C. Find the y -coordinate of the vertex of the same parabola; again, its equation is y equals x squared minus $4x$ plus 5 , and the x -coordinate of the vertex is 2 .

Answer: $y = \underline{1}$

9. The name of this order means “first rank”, which might be because the animals in this order got to pick the name.

A. Name this order of mammals that includes monkeys and humans.

Answer: **primates**

B. The primates least related to humans are galagos, lorises, and these animals native to Madagascar. Give the common name for these primates that are not **rhesus macaques** [REE-sus muh-KAHKS].

Answer: **lemurs**

C. Primates are sometimes divided into **platyrrhine** [PLAT-uh-ryn] and **catarrhine** [KAT-uh-ryn] subdivisions based on differences in this body part.

Answer: **noses**

10. During 2017, this country's Bureau of Statistics sent out a survey asking "Should the law be changed to allow same-sex couples to marry?".

A. Name this country where voters supported marriage equality despite opposition in western Queensland and western Sydney.

Answer: (Commonwealth of) **Australia**

B. Australia recently closed the Manus Regional Processing Center, an inhumane detention center for immigrants located in this country's Admiralty Islands.

Answer: (Independent State of) **Papua New Guinea** [do not accept or prompt on partial answers]

C. Many of the immigrants on Manus Island had this status given to people who have a well-founded fear of returning to their home country.

Answer: **refugee(s)**

11. **Iktinos [IK-tee-nos]** and **Kallikrates [kah-lee-KRAH-teez]** are generally credited as the architects of this building.

A. Name this temple to Athena that is part of the Acropolis in Athens.

Answer: **Parthenon**

B. This sculptor made statues to Athena both inside and outside the Parthenon. He also made the statue of Zeus at Olympia.

Answer: **Phidias [FID-ee-uss]**

C. The bronze Athena **Promachos [PROH-muh-kohss]** by Phidias was between the Parthenon and this structure, the entrance to Acropolis. This name refers to gateways that are in the Greek architectural style.

Answer: **Propylaea [prah-pih-LEE-uh]**

12. **Brontes [BRAHN-teez]**, **Steropes [stuh-ROH-pee-z]**, and **Arges [ARG-eez]** were all master blacksmiths and were this type of creature.

A. Name these mythological creatures with one eye in the center of their forehead.

Answer: **cyclopes**

B. The cyclopes built a helmet for **Hades [HAY-deez]** that gave him this power.

Answer: **invisibility** [accept any reasonable answer conveying the idea of being **unseen**]

C. The cyclopes helped the gods after the gods freed them from this dark pit.

Answer: **Tartarus [TAR-tar-uss]**

13. After studying law, medicine, and philosophy, this character explains “I stand no wiser than before.”

A. Name this scholar who makes a deal with **Mephistopheles** [meh-fiss-TAH-fuh-leez] in a two-part tragic play by Johann Wolfgang von **Goethe** [GUR-tuh].

Answer: Dr. **Heinrich Faust** [accept either underlined name; do not accept “Doctor Faustus” or “Johann Georg Faust”]

B. After Faust’s deal with Mephistopheles, he seduces this woman. After she drowns her child, a voice from Heaven proclaimed that she is saved.

Answer: **Margarete** or **Gretchen**

C. The composer Adrian Leverkühn appears in this author’s novelization of the Faust story.

Answer: (Paul) Thomas **Mann**

14. Name these musicals involving Nazis:

A. In this musical, **Fräulein** [frah-“line”] Schneider decides not to marry **Herr Schultz** [“hair” shults] because he is Jewish.

Answer: **Cabaret**

B. This Mel Brooks musical is about the title characters’ attempt to put on an intentionally offensive show, *Springtime for Hitler*.

Answer: *The **Producers***

C. This Rodgers and Hammerstein musical tells the story of the von Trapp family children, who escaped the Nazis by going to Switzerland. “Sixteen Going on Seventeen” and “My Favorite Things” are among the most famous songs in this show.

Answer: *The **Sound of Music***

15. This state of matter was achieved using rubidium during the 1990s.

A. Name this fifth state of matter that occurs at very low temperatures when groups of atoms enter a single quantum state.

Answer: **Bose-Einstein condensate** [accept **BEC**]

B. Bose-Einstein condensates often have no **viscosity** [viss-KAH-sih-tee], which means they exhibit this property.

Answer: **superfluidity** [or **superfluids**]

C. The ability of superfluids to go over obstacles by forming a Rollin film is named for this Dutch scientist who first made liquid helium and used it to discover superconductivity.

Answer: **Heike Kamerlingh Onnes** [HY-kuh KAM-ur-leeng OH-nuss] [prompt on partial last name]

16. This path generally started in Elm Grove, Independence, or Westport, though it was not a single route

A. Name this path used during the 19th century to get to the **Willamette** [“will-AM-it”] Valley and other western locations.

Answer: **Oregon Trail**

B. Getting through the Oregon Trail became easier after Native Americans told this person’s partner Robert Stuart about the South Pass. Stuart helped this person start the Pacific Fur Company.

Answer: John Jacob **Astor**

C. This Secretary of State under James K. Polk settled the Oregon boundary dispute and later became president.

Answer: James **Buchanan**

17. When tables were used instead of calculators, this angle was used to look up sine and cosine values for the original angle.

A. Give this term for the “reduced form” of an angle, equal to its distance from the x -axis and always between 0° and 90° .

Answer: **reference** angle(s)

B. This term refers to two angles that have the same initial and terminal directions, meaning that their measures differ by a multiple of 360 degrees.

Answer: **coterminal** angle(s)

C. Find the reference angle for 210° .

Answer: **30** degrees

18. This quantity is the opposite of the common log of a concentration.

A. Name this quantity that, by definition, is 7 for neutral solutions and less than 7 for acids.

Answer: **pH** [accept **power of hydrogen** or **potential of hydrogen**]

B. The pH of a solution can be calculated using this equation which gives the electromotive force, or cell potential, in terms of the reaction quotient.

Answer: **Nernst** equation

C. Ocean **acidification** [uh-SID-ih-fih-KAY-shun] occurs when carbon dioxide combines with water to form this acid. This acid then dissociates into hydrogen ions, bicarbonate, and carbonate.

Answer: **carbonic** acid [accept **H₂CO₃**]

19. In this play, Nick Bottom's head is turned into a donkey's head by a mischievous spirit, or puck, named Robin Goodfellow.

A. Name this Shakespeare play in which Oberon [OH-bur-ahn] and Titania [tih-TAHN-yah] are the King and Queen of the fairies.

Answer: A ***Midsummer Night's Dream***

B. In *A Midsummer Night's Dream*, Theseus [THEE-see-uss] marries this queen of the Amazons.

Answer: **Hippolyta** [hih-PAH-lih-tuh]

C. In the first scene of the play, this man tells his lover "The course of true love never did run smooth" after being rejected by her father.

Answer: **Lysander**

20. Single covalent [koh-VAY-lint] bonds are usually this type of bond.

A. Name this type of bond formed by end-to-end overlapping of atomic orbitals.

Answer: **sigma** bond(s)

B. The number of sigma bonds in a molecule equals the number of atoms plus the number of these structures minus one.

Answer: **rings** [accept **cycles**]

C. This molecule is the smallest hydrocarbon with a ring. It is both an explosive and an anesthetic, and its chemical formula is C₃H₆.

Answer: **cyclo*propane** or **tri*methyl*ene**

21. This person came to power during the Spanish Civil War and maintained some national power until his death in 1975.

A. Name this leader of Spain who received support from Adolf Hitler and Benito Mussolini.

Answer: Francisco **Franco** (y Bahamonde)

B. Before the Spanish Civil War, Franco put down a miners' strike in this province in Northern Spain.

Answer: **Asturias** [ahss-TOO-ree-ahss]

C. This party of royalists, whose name comes from the younger brother of Ferdinand VII [7], supported Franco.

Answer: **Carlists** or **Carlism**