**2022 Reinstein Set (VCU Version) – Packet 3**

**Tossups**

1. An activist who believed that this condition does not exist co-founded the Citizens Commission on Human Rights. That activist, Thomas Szasz [ZAZ], wrote a 1961 book on the "myth" of this condition. A two-book series relating this condition to capitalism posits that "desiring-production" is a quality of the "body without organs" and was written by Gilles Deleuze [zheel DEH-looz] and Félix Guattari [fay-LIX gah-tah-ree]. The "Great Confinement" was described in Michel Foucault's [mee-shel foo-koh's] book on this condition "and civilization." For 10 points, name this kind of condition that may be treated in the title places of Erving Goffman's book *Asylums*.
ANSWER: **mental illness** [accept rough synonyms, especially since most of the people discussed are talking almost exclusively about schizophrenia, such as **mental health conditions** or **psychoses**; accept **schizophrenia** or **madness**]

2. This person built on the success of Francisco de Miranda, who won the Battle of La Victoria [veek-toh-REE-ah]. After a series of disagreements, this person allied himself with Santiago Mariño [mah-REEN-yoh] by appointing him General of the Army of the East. This person defeated Domingo de Monteverde [mohn-tay-VAIR-day] after writing the Cartagena [kar-tah-HAY-nah] Manifesto during the Admirable Campaign. That victory allowed this person to re-establish the Venezuelan Republic in 1813. This person later became the leader of Peru. For 10 points, name this person nicknamed “The Liberator” because he liberated several South American countries from Spanish rule.
ANSWER: Simón (José Antonio de la Santísima Trinidad) **Bolívar** (y Palacios Ponte y Blanco)

3. The type of statute named for this type of crime requires certain contracts to be in writing. Theranos founder Elizabeth Holmes was indicted both for conspiracy to commit this crime and for this crime itself. In 2020, Lori Loughlin [LAWFF-lin] pled guilty to conspiracy to commit this type of crime. Loughlin was accused of committing the mail and wire types of this crime. Identity theft is often committed so that this crime can be committed. To protect people from this type of crime, the Federal Trade Commission has a scam alert system. For 10 points, name this crime in which somebody loses something due to intentional deception.
ANSWER: (wire and/or mail) **fraud** [do not accept similar terms like “scam”] 1

4. Near the end of one story by this writer, the Captain sees his white floppy hat in the water, which helps him steer clear of the island of Koh-ring. This writer has the narrator of that story describe another man as his “double”. In that story, this author wrote about sailing close to the ship *Sephora* [seh-FOR-uh], which allowed Leggatt [LEG-ut] to come aboard after escaping. In a novella by this author, the manager’s boy famously announces that one of the characters is dead shortly after that character says “The horror! The horror!”. That character, who is an ivory trader by the Congo River, is Mr. Kurtz. For 10 points, name this author of “The Secret Sharer” and *Heart of Darkness*.
ANSWER: Joseph **Conrad** [or Józef Konrad **Korzeniowski**]

5. This artist used the phrase “Femme-coccyx” [fem KAH-siks] to describe the women whom he depicted in his sculpture *Woman Aflame* and his painting *The Burning Giraffe*. Ten sculptures by this artist are in a garden in Marbella, Spain, including the depiction of his wife *Gala [GAH-luh] leaning out the window*. In a painting by this artist, a group of ants cover an orange clock in the lower left corner. That painting also shows a leafless tree whose branch holds up a melting clock. For 10 points, name this surrealist painter of *The Persistence of Memory*.
ANSWER: Salvador (Domingo Felipe Jacinto) **Dalí** (i Domènech)

6. This novel uses the phrase “angry people are not always wise” before a woman reminds a man that he sarcastically said of another woman, “She a beauty!—I should as soon call her mother a wit.” The woman who talks in that part of this novel is the sister of Louisa Hurst and lives at Netherfield Park with her brother. In this novel, that brother, Charles Bingley, marries Jane, who is the oldest of five sisters. The second oldest of those five sisters eventually falls in love with Fitzwilliam Darcy. For 10 points, name this novel about the Bennet sisters written by Jane Austen.
ANSWER: ***Pride and Prejudice***

7. After visiting a demonstration of the model of this non-vehicle object invented by Cornelis Drebbel, a man developed a form of this device originally called the "occhiolino" [AWK-yoh-lee-noh]. An attempt to improve the manufacture of these devices led to the development of the Abbe sine condition. Zacharias Janssen pioneered the "compound" form of these devices, of which 25 or more were made for use in biological research by Anton Van Leeuwenhoek [von LAY-vun-hoak]. Within 40 years of the first manufacture of these devices, Marcello Malpighi and Robert Hooke used them to discover capillaries and cells. For 10 points, name these optical devices which can be used to study objects invisible to the naked eye.
ANSWER: optical **microscope**s

8. In this novel, Master Brackett brings a physician to see a prisoner. This novel’s prisoner asks “Hast thou enticed me into a bond that will prove the ruin of my soul?”, and the doctor replies “Not thy soul; no, not thine!”. The prisoner is later released and makes a living doing needlework. The beginning, middle, and end of this novel have scaffold scenes, in the last of which Arthur Dimmesdale publicly confesses that he is Pearl’s father. The title of this novel refers to a punishment used to shame Hester Prynne [prin]. For 10 points, name this novel about the effect of an adulterous affair, written by Nathaniel Hawthorne.
ANSWER: *The* ***Scarlet Letter***

9. The Donnan effect, which is sometimes named for this situation, is caused by a net electric charge across a barrier. Changes in the constant named for this situation are related to enthalpy and temperature by the van ’t Hoff [vahnt hawff] equation. This situation exists when free energy is minimized. The constant named for this situation can be found by dividing two rate constants. A change in conditions will in turn affect the conditions of this situation according to Le Chatelier’s [luh “shot”-lee-ay’z] principle. For 10 points, name this situation in which the rate of a forward reaction equals the rate of a backwards reaction, so that concentrations do not change.
ANSWER: chemical **equilibrium**

10. William F. Buckley ran for this position in 1965. The person who beat Buckley, who would win re-election to this job by running for the Liberal Party after losing the Republican primary, was John Lindsay. The person who held this job from 1934 to 1945 was a pro-New Deal Republican who hosted the radio show “Talk to the People” and worked closely with Robert Moses to build roads, bridges, and airports. From 1994 to 2001, this job was held by Rudy Giuliani, and Giuliani was succeeded by the wealthiest politician in U.S. history, Michael Bloomberg. For 10 points, name this position, once held by Fiorello La Guardia [fee-oh-RELL-loh lah GWAR-dee-ah], that oversees the most populous U.S. city.
ANSWER: **mayor** of **New York** City [accept alternate phrasings that include both underlined parts; prompt on **mayor**; accept **NYC** in place of **New York**]

11. The anthropologist Alfred Radcliffe-Brown noticed that a serpent named for these things was a central figure in many Aboriginal [ab-“original”] Australian myths. Greek gods often sent messages using a goddess who traveled along these things. That goddess of these things, who cut a lock of Dido’s [“DIE”-doh’z] hair when Dido was on the funeral pyre, was Iris. In Norse mythology, a burning bridge between Midgard and Asgard is one of these things called Bifrost [BIV-rahst]. For 10 points, name these things that in Irish mythology have a pot of treasure at their end, guarded by a leprechaun.
ANSWER: **rainbow**s

12. For some organisms, this cell is surrounded by the vitelline [“vie”-TELL-un] membrane, and in other organisms it is surrounded by the zona pellucida [puh-LOO-sid-uh]. The nucleus of this cell is the germinal [JER-muh-nul] vesicle. This cell is the largest human cell. The structure holding this cell either goes through a disintegration process called atresia [uh-TREE-zhuh] or turns into a corpus luteum [LOO-tee-um]. Like hair, these cells originate from follicles, which release this cell in response to the luteinizing [LOO-tee-un-“eyes”-ing] hormone. For 10 points, name this cell that is released from the ovaries and can be fertilized by sperm.
ANSWER: **egg** cell or **egg**s or **ovum** or **ova** [or **oocyte**(s)]

13. With this president’s support, Congress passed the American Housing Act, which cleared slums and allocated money to build 800,000 public housing units. Despite this president’s veto, Congress reacted to a wave of millions of workers striking by controlling union activity through the Taft-Hartley Act. A famous picture of this president shows him holding up a mistaken *Chicago Tribune* claiming he had lost to Thomas Dewey. A sign on this president’s desk said “The buck stops here” on one side and “I’m from Missouri” on the other. For 10 points, name this president who decided to drop atomic bombs on Japan shortly after succeeding Franklin D. Roosevelt.
ANSWER: Harry S. **Truman**

14. This instrument was played by the leader of the Gramercy Five whose big band popularized Cole Porter's song "Begin the Beguine" [beg-een]. This instrument of Artie Shaw is played on "Egyptian Fantasy" by Sidney Bechet [buh-shay], who later switched to the related soprano saxophone. The leader of a landmark 1938 jazz concert at Carnegie Hall primarily played this instrument and was known as the "King of Swing." For 10 points, name this single-reeded woodwind that is traditionally made of black grenadilla wood and was played by Benny Goodman.
ANSWER: [jazz] **clarinet**

15. To improve transportation in its western part, this country recently built the Golmud-Korla railway, which crosses the Taklamakan [tahk-luh-MAH-kun] Desert. The north end of the Karakoram [kar-uh-KOR-um] Highway is at this country’s city of Kashgar [KASH-gar], which is in the western part of this country near Kyrgyzstan [KUR-gih-stan] and Tajikistan [tuh-JIK-uh-stan]. Both the third- and sixth-longest rivers in the world are entirely in this country. The south of this country borders Myanmar, Bhutan, and Laos, and its north borders Russia and Mongolia. For 10 points, name this country whose capital is Beijing.
ANSWER: (People’s Republic of) **China** or **PRC** or **Zhonghuá** (Rénmín Gònghéguó)

16. One way to calculate this value is to multiply 2 times the fine-structure constant times the von Klitzing constant and divide by the speed of light. This value is also equal to 1 plus the magnetic susceptibility. The difference between diamagnetic [“DIE-uh-magnetic”] and paramagnetic [“PAIR-uh-magnetic”] materials is that in diamagnets the relative type of this value is less than 1. This value equals the ratio of a magnetic *B*-field to an auxiliary magnetic *H*-field. Until recently, 4 pi times 10 to the *−*7th power was the defined value for this quantity in free space. For 10 points, name this measure of resistance to the formation of a magnetic field.
ANSWER: (magnetic) **permeability** (of free space)

17. At the beginning of a short story by this author, a woman waits to call her mother and then tells her that her husband was not staring at trees as he drove. In that story, this author wrote about a conversation on the beach between Sybil Carpenter and Seymour Glass. A novel by this author is narrated by the brother of the author of “The Secret Goldfish”. This author’s best-known narrator becomes upset because of a date between Ward Stradlater and Jane Gallagher after he is expelled from Pencey Preparatory Academy. For 10 points, name this author of “A Perfect Day for Bananafish” who wrote about Holden Caulfield in *The Catcher in the Rye*.
ANSWER: J(erome) D(avid) **Salinger**

18. This organization carried out Operation Active Endeavour in the Mediterranean Sea shortly after invoking Article V [5] for the first time. This organization’s Article X [10] governs its expansions. The headquarters of this organization moved from Paris to Brussels when France pulled out of its military structure. In 1999 and 2004, this organization added several eastern European countries, which according to Russia was a broken promise. In reaction to West Germany joining this organization in 1955, the Warsaw Pact was formed. For 10 points, name this organization formed in 1949, an alliance of countries who were opposed to the Soviet Union.
ANSWER: **NATO** or the **North Atlantic Treaty Organization**

19. In a Wronskian [RAHN-skee-un] matrix, after the first row each entry is made by applying this operation to the entry above it. “Partial” versions of this operation are used to compute each entry in a Jacobian [yah-KOH-bee-un] matrix. Divergence, curl, and gradient are versions of this operation for vector-related functions. A rhyme ending “draw the line and square below” is used to remember how to perform the quotient rule for this operation. This operation can also be done using the product rule and the chain rule. For 10 points, name this operation used in calculus to find the slope of a tangent line to a function’s graph.
ANSWER: **derivative**s or **differentiation** or **differentiating**

20. Late in his career, this musician recorded an album that had Joe Zawinul [ZAW-wi-nul], Herbie Hancock, and Chick Corea [kor-EE-uh] all play electric piano. That album by this musician features the songs “Shhh” and “Peaceful”. Much of this performer’s music was arranged by Gil Evans, including his performance of “Concierto de Aranjuez” [kohn-see-AIR-toh day ar-ahn-WEZ] on *Sketches of Spain*. The song “Flamenco Sketches” appears on an album by this musician that features the saxophonists “Cannonball” Adderley and John Coltrane. For 10 points, name this jazz trumpeter who recorded the albums *In a Silent Way* and *Kind of Blue*.
ANSWER: Miles (Dewey) **Davis** (III)

21. This order contains an animal called the coypu [KOY-poo], though Americans use the name “nutria” [NOO-tree-uh] because of a trade name for the animal’s fur. Animals in this order are responsible for spreading Lassa fever and other roboviruses. This order has far more species than any other order of mammals. This order is characterized by continuously growing incisors from both jaws. Animals in this order usually do not migrate, but lemmings do. The largest animal in this order is the capybara [kap-ee-BAIR-uh]. These animals live on land, though muskrats and beavers are in this order and are good swimmers. For 10 points, name this order that includes guinea pigs, rats, and mice.
ANSWER: **rodent**s or **Rodent**ia

22. If the divergence of a vector field is this type of number, then the field’s flux is outward rather than inward. If a correlation coefficient is this type of number, then an independent value greater than the mean is likely paired with a dependent value greater than the mean. If the dot product of two vectors is this type of number, the angle between the vectors is acute. The *range* of exponential functions is these numbers, and the *domain* of logarithmic functions is these numbers. If a slope is this type of number, then a line is increasing. For 10 points, give this term for numbers greater than zero.
ANSWER: **positive** real numbers [or **positive** reals; accept **positive**s; before the end, prompt on descriptions like numbers **greater than 0** or numbers **larger than 0**; do not accept answers containing “non-negative”]

23. After listing several Biblical men who were led astray by women, this character states “If I be led astray, methinks I may be excused.” This character’s horse is Gringolet [grahn-goh-lay]. This character receives a slain deer and then gives a kiss to Bertilak as part of a bargain that they give each other what they received during the day. This character later wears a magic girdle that is supposed to protect him. Before that, this character chops off a giant’s head, but the giant picks up the head and walks away. For 10 points, name this nephew of King Arthur who, according to the Pearl Poet, had an adventure involving a green knight.
ANSWER: Sir **Gawain** [**guh-WAYN**]

24. This object is the location of Ahuna [ah-HOO-nuh] Mons, which is a large cryovolcano [“CRY”-oh-“volcano”] with vertical streaks. Research in the last few years indicates that this object has a similar amount of water and water ice to Earth, including in its mantle and on its surface, even though this object’s radius is a little under one-tenth of Earth’s radius. This object is the larger of the two objects orbited by the *Dawn* spacecraft, which has been going around it since 2015. This object is larger than, but in a similar orbit to, Pallas and Vesta. This object is by far the nearest dwarf planet. For 10 points, name this largest asteroid.
ANSWER: **Ceres** [**“series”**]

**2022 Reinstein Set (VCU Version) – Packet 3**

**Bonuses**

1. A poem by this writer begins “I felt a Funeral, in my Brain.” For 10 points each:
[10] Name this poet who lived in Amherst, Massachusetts.
ANSWER: Emily (Elizabeth) **Dickinson**
[10]One Dickinson poem begins by saying that she “could not stop for” this concept.
ANSWER: **Death**
[10]Another Dickinson poem begins by saying that she is this concept and asking “Who are you?”. The poem expresses hope that “Then there’s a pair of us!”.
ANSWER: **nobody** [must be exact]

2. This composer wrote keyboard pieces in all 24 major and minor keys in *The Well-Tempered Clavier [KLA-vee-ur]*. For 10 points each:
[10] Name this German Baroque composer who also wrote the *Goldberg Variations*.
ANSWER: Johann Sebastian **Bach**
[10]Bach wrote many of these contrapuntal [kahn-truh-PUN-tul] compositions, including many of the parts of *The Well-Tempered Clavier*. A piece he worked on at the end of his life is titled *The Art of* this type of music.
ANSWER: **fugue**(s) [**fyoog**]
[10] *The Art of Fugue* used a motif [moh-TEEF] that spelled Bach’s name. This 19th-century composer later wrote *Fantasy and Fugue on the Theme B-A-C-H*.
ANSWER: Franz **Liszt** [**“list”**] [or **Liszt** Ferenc]

3. This person got into arguments with Robert Koch [“coke”] about developing the anthrax vaccine. For 10 points each:
[10] Identify this French scientist whose namesake process is the application of heat to milk to make the milk last longer.
ANSWER: Louis **Pasteur** [prompt on **pasteurization** or **pasteurizing**]
[10] Both the Pasteur effect and the Pasteur point are based on levels of this element in the air determining whether a process is anaerobic or aerobic.
ANSWER: **oxygen** [accept **O**]
[10] Louis Pasteur and his wife Marie studied the properties of this organic acid, whose chemical formula is C4 H6 O6 [“C four H six O six”]. Those studies led to one of the earliest discoveries of an enantiomer [en-ANT-ee-oh-mur].
ANSWER: **tartaric** acid

4. This war was interrupted by the Peace of Nicias [NISH-ee-uss]. For 10 points each:
[10] Name this 5th-century war fought by the Delian [DEE-lee-un] League against a league led by Sparta that this war is named for.
ANSWER: **Peloponnesian** [**pell-uh-puh-NEE-zhun**] War
[10] This Athenian historian served as a general during the war and wrote the *History of the Peloponnesian War*.
ANSWER: **Thucydides** [**thoo-SID-ih-deez**]
[10] This number is both the number of years in the name of the peace plan that preceded the war and the number of tyrants put in charge of Athens after the war.
ANSWER: **30** (years or tyrants)

5. For 10 points each, answer the following about important locations in the history of the Beatles.
[10] All four members of the Beatles were born and raised in this English city. Brian Epstein became the band's manager after seeing them perform in this city's Cavern Club.
ANSWER: **Liverpool**
[10] All of the Beatles except for Ringo Starr got their start playing in nightclubs in Hamburg, including this replaced drummer.
ANSWER: Pete **Best** [or Randolph Peter **Best**]
[10] The Beatles' 1969 album starting with "Come Together" is named for this location of EMI's London studio, where most of the band's material was recorded.
ANSWER: **Abbey Road**

6. This country gained control of the West Bank shortly after fighting Israel in 1948. For 10 points each:
[10] Name this country whose capital is Amman.
ANSWER: (Hashemite Kingdom of) **Jordan** [or al-Mamlakah al-**Urdun**iyah al-Hashimiyah]
[10] Jordan lost the West Bank in this 1967 war. It is named for the short amount of time that it lasted.
ANSWER: **Six-Day** War
[10] This king led Jordan from 1952 to 1999. In 1994, he became the second Arab leader to sign a peace treaty with Israel.
ANSWER: **Hussein** bin Talal [prompt on **Talal**]

7. The characters in this work are seven women and Panfilo, Filostrato, and Dioneo [dee-oh-NAY-oh].
[10] Name this 14th century collection of stories. For 10 points each:
ANSWER: *The* ***Decameron*** *(Tales)* [or ***Decamerone***]
[10] This author wrote *The Decameron*.
ANSWER: Giovanni **Boccaccio** [joh-VAH-nee **boh-KAHT-choh**]
[10] This playwright’s *The Confounded Husband* and *The School for Husbands* both had plots based on tales from *The Decameron*.
ANSWER: **Molière** [**mohl-yair**] [or Jean-Baptiste **Poquelin**]

8. For 10 points each, identify these body parts located near the throat:
[10] This tube brings food from the throat to the stomach.
ANSWER: **esophagus** [**eh-SAH-fuh-guss**]
[10] This projection at the back of the soft palate of the mouth hangs down into the throat.
ANSWER: (palatine) **uvula** [**YOOV-yoo-luh**]
[10] This enlarged lymphatic tissue is sometimes called the pharyngeal [fair-un-JEE-ul] tonsil. It is higher and further back than what is normally called the tonsils.
ANSWER: **adenoid**s

9. This person is traditionally credited for writing the Book of Proverbs. For 10 points each:
[10] Name this person who was David’s son and successor as King of Israel. The Bible claims that he built the First Temple in Jerusalem.
ANSWER: **Solomon** [or **Shlomo** ben David; prompt on **Jedidiah** or **Yedidiah**]
[10] Solomon was also traditionally credited with writing this book that states “To every thing there is a season, and a time to every purpose under the heaven.”
ANSWER: **Ecclesiastes** [**eh-klee-zee-ASS-teez**] [or **Kohelet**]
[10] This mother of Solomon married David after her marriage to Uriah the Hittite, whose death David indirectly caused. She worked with Nathan to get David to recognize Solomon as his successor.
ANSWER: **Bathsheba** [or **Bat-sheba**]

10. This house is in Mill Run, Pennsylvania, which is about 40 miles from Pittsburgh. For 10 points each:
[10] Name this house designed for the Kaufmann family.
ANSWER: **Fallingwater**
[10]This architect designed *Fallingwater* as well as many houses in Illinois, such as the Frederick Robie House and Dana Thomas House.
ANSWER: Frank Lloyd **Wright** [or Frank Lincoln **Wright**]
[10] Fallingwater uses this type of projecting beam that is only supported on one end. These beams are often used to make bridges.
ANSWER: **cantilever**ed beam or **cantilever**s

11. According to this poem, “The falcon cannot hear the falconer.” For 10 points each:
[10] Name this poem that ends “And what rough beast, its hour come round at last, slouches towards Bethlehem to be born?”.
ANSWER: “The **Second Coming**”
[10] This Irish poet wrote “The Second Coming” and “Lake Isle of Innisfree”.
ANSWER: W(illiam) B(utler) **Yeats** [rhymes with **“gates”**]
[10] “The Second Coming” contains this two-word Latin phrase that can be translated as “world soul”.
ANSWER: “**Spiritus Mundi**”

12. In 1872, the Equal Rights Party nominated Victoria Woodhull for president and this man for vice president. For 10 points each:
[10] Name this abolitionist and orator who wrote three autobiographies, including *My Bondage and My Freedom*, that described his escape from slavery.
ANSWER: Frederick **Douglass** [or Frederick (Augustus Washington) **Bailey**]
[10] Inspired by William Lloyd Garrison’s *The Liberator*, Douglass started this newspaper in 1847.
ANSWER: *The* ***North Star***
[10]Douglass published *The North Star* in this city, where he also delivered his “What to the Slave Is the Fourth of July?” speech.
ANSWER: **Rochester**, New York

13. For 10 points each, name these medical tests:
[10] This test produces images of bones using radiation that has wavelengths between that of ultraviolet light and gamma rays, similar to a C.T. scan.
ANSWER: **X-ray**s
[10] In this test, tissue or fluid is removed from the body and sent to pathology. The tissue is often taken from a tumor or cyst.
ANSWER: **biopsy**(ing)
[10] This result from a blood test gives the percentage by volume of red blood cells. It can indicate anemia or leukemia.
ANSWER: **hematocrit** [prompt on **packed-cell volume** or **PCV**]

14. This novel begins with letters written by Captain Robert Walton. For 10 points each:
[10] Name this novel written by Mary Shelley that is subtitled *The Modern Prometheus*.
ANSWER: ***Frankenstein****(: The Modern Prometheus)*
[10]The monster in *Frankenstein* reads this poem by John Milton and is able to relate to both Adam and Satan.
ANSWER: ***Paradise Lost***
[10]This is the name of Victor Frankenstein’s younger brother, who is strangled by the monster.
ANSWER: **William** Frankenstein [do not accept or prompt on “Will” or “Bill” or “Billy”]

15. Along with Marjorie Taylor Greene, this other congressman attended the America First Political Action Conference run by white supremacist Nick Fuentes. For 10 points each:
[10] Name this Congress member and dentist who was denounced in a 2018 campaign ad by six of his brothers and sisters and was censured by the House in 2021 for posting a customized anime video that appears to depict him killing Alexandria Ocasio-Cortez.
ANSWER: Paul (Anthony) **Gosar**
[10] Gosar represents this southwestern state, whose senators are Mark Kelly and Kyrsten Sinema.
ANSWER: **Arizona**
[10] Gosar and Greene were referred to as "morons on my team" by this senator, who was the only Republican to vote "guilty" in Donald Trump's first impeachment trial.
ANSWER: (Willard) Mitt **Romney**

16. When this type of payment is required for imports or exports, it is called a tariff. For 10 points each:
[10] Name this required payment to a government. In the U.S., it is often levied on income and sales.
ANSWER: **tax**es [or **tax**ation]
[10] Income taxes are often structured so that as the taxed amount increases, the taxation rate also increases. What term refers to that scheme?
ANSWER: **progressive** (income) taxation
[10] This measure that uses the area between the line of equality and the Lorenz curve measures economic inequality. A progressive tax moves this quantity closer to zero.
ANSWER: **Gini** [**JEE-nee**] coefficient

17. For 10 points each, name these ships and a submarine from U.S. history:
[10] This English ship reached Cape Cod in 1620.
ANSWER: the ***Mayflower***
[10]This ship, nicknamed *Old Ironsides*, is now used as a museum. It defeated several British ships during the War of 1812.
ANSWER: USS *Old* ***Constitution***
[10]This Confederate submarine sank twice during construction and a final time after its only success. When it sank the USS *Housatonic* [hoo-suh-TAH-nik], it became the first submarine to sink a warship.
ANSWER: *H. L.* ***Hunley*** [accept CSS *H. L.* ***Hunley***]

*Virginia content question - non-Virginia tournaments may read bonus 18a instead.*
18. This man and his cousin Aaron Brooks were the starting quarterbacks in one game of a Deep South NFL rivalry. For 10 points each,
[10] Name this former Atlanta Falcon, who grew up in Newport News and attended Virginia Tech. He won the NFL Comeback Player of the Year award in 2010 after a stint in jail for dogfighting.
ANSWER: Michael (Dwayne) **Vick**
[10] This now-defunct league had a team in Hampton Roads called the Virginia Squires. Julius Erving started his career with the Squires before playing for another team that originated in this league, the New Jersey Nets.
ANSWER: **ABA** [or **American Basketball Association**]
[10] In 2018, the University of Virginia men's basketball team became the first ever 1 seed to lose their opening game in the NCAA Division I tournament, doing so to this school's Retrievers.
ANSWER: **UMBC** or University of **Maryland-Baltimore County** [do not accept or prompt on "[University of] Maryland"]

*At VCU site: Read the above bonus and skip bonus 18a.*
18a. This artist collaborated with the West German Ulay on pieces such as *Breathing In/Breathing Out*. For 10 points each:
[10] Name this Serbian performance artist of the *Spirit Cooking* recipe book, whose *Rhythm* series culminated in allowing audience members to physically attack her.
ANSWER: Marina **Abramović** [aa-BRAA-muh-vitch]
[10] Abramović and Ulay's final collaboration was 1988's *Lovers* in which the two performers began walking towards each other at opposite ends of the 3000-mile main span of this structure; Ulay began at the "dragon's tail" in the Gobi Desert and Abramović at the "dragon's head" on the Bohai Sea.
ANSWER: **Great Wall** of China [or **Wànlǐ Chángchéng**]
[10] Abramović's 2010 MoMA exhibition *The Artist Is Present* invites viewers to participate in this action which Abramović performs throughout the piece.
ANSWER: **sitting** [accept **staring** or any description of two people sitting across a table from each other silently]

19. The treatises *On Interpretation* and *Prior Analytics* are compiled into this man's *Organon*. For 10 points each:
[10] Name this student of Plato who established the Lyceum. This philosopher's writings were synthesized with Christianity in the standard medieval university curriculum of Western Europe.
ANSWER: **Aristotle**
[10] The *Organon* contains Aristotle's writings on this field of philosophy which he defined as "new and necessary reasoning." This field studies how conclusions arise from premises via inference and deductive arguments.
ANSWER: **logic**
[10] In the *Prior Analytics*, Aristotle discussed this logical argument, in which a conclusion is drawn from two premises which each contain a term found in the conclusion. This argument follows the form "if P, then Q, if Q, then R; therefore if P, then R".
ANSWER: **syllogism** [accept word forms such as **syllogistic** reasoning]

20. The principle named for this person says that all points of a wave front can be regarded as a wave source. For 10 points each:
[10] Name this Dutch scientist who also studied Saturn’s rings.
ANSWER: Christiaan **Huygens** [**“HI”-gunz**]
[10] The parallel axis theorem, which is sometimes named for Huygens and Jakob Steiner, is used to calculate this property with respect to axes that don’t go through an object’s center of mass.
ANSWER: (first mass) **moment of inertia** [do not prompt on partial answers]
[10] Huygens claimed that he built an engine that used this substance as fuel, but there is historical debate as to whether he succeeded. This substance is a combination of saltpeter, sulfur, and charcoal.
ANSWER: **gunpowder** or **blackpowder**

**Extras**

21. The length of this type of segment is often represented by the letter *h* because it is equivalent to the height. For 10 points each:
[10] Give this term for a segment that connects a vertex of a triangle to the opposite side and is perpendicular to the side.
ANSWER: **altitude**(s)
[10] Find the length of a triangle altitude if it is in a triangle with an area of 20 square units and it is perpendicular to a side of length 5 units.
ANSWER: **8** units
[10] Find the length of the altitude to the hypotenuse of a right triangle if the altitude divides the hypotenuse into segments of lengths 3 units and 12 units.
ANSWER: **6** units

22. Metals are often used for this purpose. For 10 points each:
[10] Name these materials that allow the free flow of electrical current, in contrast to insulators.
ANSWER: (electrical) **conductor**s [or **conducting** materials]
[10] This material property, which is low in electrical conductors, equals resistance times cross-sectional area divided by length.
ANSWER: **resistivity** [do not accept variations]
[10] This process is the weakening of an electric field due to the presence of conductors. The Debye [duh-BY] form of this effect occurs in plasmas.
ANSWER: electric-field **screen**ing or **shield**ing or **sheath**ing

23. For 10 points each, answer the following about mathematical tools:
[10] Classical geometric construction problems are limited to an unmarked straightedge and this device, used to draw circles or arcs.
ANSWER: **compass**(es)
[10] These ancient calculation instruments usually had sets of five beads on one side and two beads on the other side.
ANSWER: **abacus**(es) [or **abaci** or **soroban**s or **suanpan**s]
[10] Find the result of a one-digit by two-digit multiplication using Napier’s bones if the left square has an upper-left 3 and lower-right 5, and the right square has an upper-left 4 and lower-right 9.
ANSWER: **399**

24. This set of numbers is often represented by the letter **Z** because of the German word *Zahlen* [TSAH-len], meaning “numbers”. For 10 points each:
[10] Name this set that consists of zero, positive and negative 1, positive and negative 2, positive and negative 3, and so on.
ANSWER: **integer**s
[10] In these equations, only integer solutions are considered. These equations are named after an ancient Greek mathematician.
ANSWER: **Diophantine** [**“die-oh-FAN-teen”**] equations [prompt on **Diophantus**]
[10] The search for Pythagorean [puh-THA-guh-ree-un] triples is a Diophantine equation. Find the two numbers other than 7 that are in the only primitive Pythagorean triple that contains the number 7.
ANSWER: **24** and **25** [either order]