

2016 SOLON

PACKET 09:

TOSSUPS:

1. The “limit of $\sin x$ divided by x equals 1” as x approaches this number. This number makes up the off-diagonal entries of an identity matrix, while in set theory, this number defines the cardinality of an empty set. The (*) roots of a polynomial function occur at “ f of x equals” this number. Any number raised to the power of this number yields 1. FTP, name this integer which is neither positive nor negative.

ANSWER: Zero [HP]

2. In one of this man’s works, he argued for “sharp mercy” against the Jews and advocated seizing their property, that work is “On the Jews and Their Lies.” In another of his works “against the Fanatics,” he argued that Christ is truly present in the (*) Eucharist, a topic he debated at the Marburg Colloquy. He advanced the doctrine of *sola fide*, salvation through faith alone, and he opposed the sale of indulgences in his 95 Theses. FTP, name this German monk of the Protestant Reformation.

ANSWER: Martin Luther [TB]

3. This poet asked Thomas Higginson if her verse was “alive;” this poet also wrote the “Master” letters. This poet’s first collection was *The Single Hound*. This poet saw a bird bite “an Anglemorm in half,” and wrote “A Light Exists in Spring” and “Wild (*) Nights! Wild Nights!” She also “taste[d] a liquor never brewed and says she is “Nobody! Who are you?” FTP, name this Belle of Amherst who wrote “Because I could not stop for Death?”

ANSWER: Emily Dickinson [The first poem mentioned is “A Bird came down the Walk--”] [CS]

4. Lord Ripon issued the Famine Codes in this country where “Clemency” Canning served as governor-general. Robert Clive fought the Battle of Plassey here, where a revolt sprouted after rumors that Enfield cartridges were lubricated with (*) animal fat. A leader in this country organized the Salt March and advocated satyagraha, or non-violence. FTP, name this country colonized by Britain, where the Sepoy Mutiny occurred, the home of Mahatma Gandhi.

ANSWER: India (accept Bharat or Hindustan) [The Enfield was a rifle used by the Sepoy mercenaries hired by the British] [CS]

5. This scene is depicted above a skeleton-topped coffin and below an arch in Masaccio’s *The Holy Trinity*. In one depiction of this scene, the Lithuanian flag flies in the upper right above a burning synagogue. A painting of this scene in a field with red trees is Gauguin’s (*) “Yellow” version of its central figure. Marc Chagall depicted this scene in “Yellow” and in “White.” FTP, name this scene in which, in Salvador Dali’s version, Jesus hangs on a hypercube-shaped cross.

ANSWER: Crucifixion of Jesus (accept *The Yellow Crucifixion* or *White Crucifixion*) [RM/PP]

6. **Constantin Cavafy was a poet from this country. In a play from this country, the title character is buried alive after giving her brother his last rites. In a comedy from this country, men search for the (*) Hoopoe, and in another play from it, the title character kills her husband Jason and flies off in a chariot pulled by dragons. Plays from this country are sometimes named for their choruses. FTP, name this homeland of Sophocles, Aristophanes and Euripides.**

ANSWER: Greece (or Hellas, generously anti-prompt on “Athens” because of the ancient stuff) [The plays mentioned, in order, are Antigone, The Birds, and Medea] [CS]

7. **This man’s speeches include the 18th of June Appeal. He worked with the FLN to sign the Evian Accords, which led to Algerian independence, and this leader dissolved the National Assembly during May 1968 student protests. This man served under (*) Philippe Petain [pay-TAN] during World War I, but later opposed him as the leader of the Free French during World War II. FTP, name this general, the first president of France’s Fifth Republic.**

ANSWER: Charles de Gaulle [TB]

8. **This body of water is the site of an annual rowing event near Henley, and it was also used for the 1948 Summer Olympics. The Teddington Locks are upstream from the Tidewater on this river, whose source is in the Cotswolds near (*) Gloucester. Windsor Castle is located along the banks of this river, which flows through Greenwich and Oxford. FTP, name this longest river in England, which drains into the North Sea after passing through London.**

ANSWER: River Thames [“TEMS”] [PP]

9. **These things are better if they have higher areal density, and this device’s actuator contains a voice coil as well as a permanent high-flux magnet. These things can be arranged in a RAID array, and a (*) RAM integrated circuit may serve as a buffer or cache in these things. These things can store several terabytes of data, and “external” examples of them can be attached via a USB port. FTP, name these devices that store files on a computer.**

ANSWER: hard drive (or hard disk drive, accept HDD and external hard drive)

10. **In this modern-day state, runaway John Punch was enslaved, though his white conspirators only got a longer indentured servitude. Opechancanough [Oh-petch-ah-en-KAH-noh] traded with a settlement in this colony in which Dale’s Laws were passed. William (*) Berkeley governed this colony during a revolt which massacred the Doeg [DOWG] tribe; that was Bacon’s Rebellion. One settlement in this colony endured the “starving time.” FTP, name this colony home to Williamsburg and Jamestown.**

ANSWER: Virginia [CS]

11. **This leader instituted a 13% flat income tax rate. Ronald Lauder praised this man for making his country “a place where Jews are welcome.” After signing a deal with Rosneft,**

Exxon executive Rex Tillerson received the (*) Order of Friendship from this man in 2013. Barack Obama sanctioned diplomats from this leader's country after allegations of meddling in the 2016 US election. FTP, name this former KGB official and current President of Russia.

ANSWER: Vladimir Putin [PP]

12. If this quantity for an material varies gradually with position, that material can be classified as GRIN. If this property depends on the polarization and propagation direction of light, a substance exhibits birefringence. The (*) focal length of a lens is determined by this and the radii of curvature of its surfaces. This measure variance due to a change in wavelength can be seen in the dispersion of light through a prism. FTP, name this number that describes how light propagates through a medium.

ANSWER: Index of Refraction [credit]

13. Gabriel Betteredge believes a novel named after this character is prophetic in *The Moonstone*. This character dreams of a man from a black cloud who accuses him of not repenting. He befriends Xury, fights off 300 wolves in the Pyrenees, and uses wooden (*) crosses as a calendar. This man rescues a native and names him after day of the week on which he finds him, Friday. FTP, name this man shipwrecked on a deserted island in a Defoe novel.

ANSWER: Robinson Crusoe (accept either underlined portion) [*The Moonstone* is a detective novel by Wilkie Collins] [CS]

14. A composer from this country made a cantata out of "Belshazzar's Feast." A composer from this country created an opera based on *The Pilgrim's Progress* and based his *A Sea Symphony* on Whitman's poetry. "Zadok the Priest" is a (*) coronation ode created by a composer who mainly worked in this country, and also wrote *Water Music*.. FTP, name this home country of the composers of *Dido and Aeneas* and the *Enigma Variations*, Henry Purcell and Edward Elgar.

ANSWER: Great Britain (or the United Kingdom; accept England, but do not accept any other portion of the UK) [The referenced but unnamed composers are William Walton, George Frideric Handel, and Ralph [RAFE] von Williams] [CS]

15. Michel Foucault wrote a book on *The [this practice] of Knowledge*, whose subfields include garbology. Lewis Binford's processual school and C J Thomsen's three-age system govern this discipline. Heinrich Schliemann used it to find (*) historical evidence for the *Iliad*. Sites studied by people in this field include Sutton Hoo and Harappa. FTP, name this field, whose practitioners Howard Carter and Arthur Evans excavated King Tut's tomb and Knossos.

ANSWER: Archaeology [CS]

16. This country is home to the authors of *The Stone Diaries*, "The Cremation of Sam McGee," and "The Moons of Jupiter" and "The Dance of the Happy Shades." Those authors are

Carol Shields, Robert Service, and 2013 Nobel winner (*) Alice Munro. One of its authors wrote of Gilead, where Offred is Fred's handmaid. FTP, name this country home to Margaret Atwood, whose Roch Carrier wrote the stereotypical "The Hockey Sweater."

ANSWER: Canada (or "Our Neighbor to the North," or any other *humorous* descriptors of that country) [Offred is a character in Atwood's *The Handmaid's Tale*.] [CS]

17. In this medium, Diane Arbus created her *Child with Toy Hand Grenade in Central Park*. "A Compassionate Eye" was made in this medium in the Manzanar internment camp. Works produced in this medium include "Moonrise, Hernandez, (*) New Mexico" and "Moon over Half Dome." Those works are by Ansel Adams. FTP, name this medium in which Dorothea Lange depicted a "Migrant Mother" using a camera.

ANSWER: Photography [credit]

18. In this nation, Valeriano "Butcher" Weyler put revolutionaries into *reconcentrados*, or concentration camps, and Jose Marti and Maximo Gomez were freedom fighters from this nation. This nation's independence struggle featured the Ten Years War against (*) Spain, and the United States blockaded this nation after the U.S.S. *Maine* exploded in this nation's harbor of Havana. FTP, name this nation that until 2008 was led by Fidel Castro.

ANSWER: (Republic of) Cuba [TB]

19. These structures are composed of proteins called histones wrapped in supercoils, and having an abnormal numbers of these structures is called aneuploidy. Telomerase lengthens the ends of these structures, and these structures can be spread out and viewed on a (*) karyotype. An extra one of these is known as a trisomy, and humans typically have 23 pairs of these structures. FTP, name this DNA-containing structure that comes in X and Y varieties.

ANSWER: Chromosome(s) [RM]

20. One of these beasts in Inuit mythology who kills anyone who hunts alone is called the Amarok. A man was turned into one of these after he served Zeus the flesh of his son, Nyctimus. One of this type of animal is tricked into being (*) bound by a dwarven ribbon. One of these creatures raised the founder of Rome, Romulus, and Juno is associated with them. FTP, name this species which Lycaon was turned into and to which Fenrir belongs.

ANSWER: Wolves or Wolf (accept *Canis lupus*, but do not accept or prompt on "dog(s)") [GP]

Tiebreaker:

21. Functional groups containing this element include azides, and this substance is expelled in urea. This element triple-bonds with carbon to form cyanide, and diazotrophs fix this element by turning it from a gas into substances like the one formed by the (*) Haber process, ammonia. This element makes up about 78% of the Earth's atmosphere, and this element is often found in fertilizer. For ten points, name this element with atomic number 7 and symbol N.

ANSWER: nitrogen (accept N before mentioned)

BONUSES:

1. During this man's rule, the Act for the Settlement of Ireland was passed. For ten points each:

[10] Name this Lord Protector of England, who won the Siege of Drogheda and confiscated land from Irish Catholics. He also fought at the Battles of Naseby and Marston Moor during the English Civil War.

ANSWER: Oliver Cromwell

[10] Cromwell served as second-in-command to Thomas Fairfax in this centralized army, created to support the Parliamentary cause. Members of Parliament who wanted to fight in this army had to resign office under the Self-Denying Ordinance.

ANSWER: New Model Army

[10] Cromwell also was an influential member of this specific parliament, which was the remnant of the Long Parliament. Cromwell dismissed this legislature by force in 1653, replacing it with the Barebones Parliament.

ANSWER: Rump Parliament [GP/TB]

2. One scientist with this surname analyzed samples of pitchblende using an electrometer. For 10 points each,

[10] Name this surname of a husband and wife that discovered radium and polonium.

ANSWER: Curie (accept Marie **Curie** and Pierre **Curie**)

[10] The Curies and Henri Becquerel won the Nobel Prize for their work with this process that emits energy and particles from an unstable nuclei.

ANSWER: Radioactivity (accept equivalents like radioactive decay)

[10] This element, along with Uranium, is well-known for its radioactivity. It was used in the Fat Man atomic bomb dropped over Nagasaki.

ANSWER: Plutonium [EF]

3. A painter in this movement painted a nearly nude bodybuilder and woman posing in a living room in *Just what is it that makes today's homes so different, so appealing?*. For 10 points each:

[10] Name this art movement characterized by Campbell soup cans and its focus on mass culture. It is associated with many New York artists.

ANSWER: Pop Art

[10] This painter depicted car wrecks in his *Death and Distaster* series, but is perhaps better known for his silkscreen prints of famous individuals including Mick Jagger, Mao Zedong, and Marilyn Monroe.

ANSWER: Andy Warhol (accept Andrew **Warhola**)

[10] This controversial street art has a long connotation with vandalism. It has been used as a medium for anonymous English artist Banksy.

ANSWER: Graffiti [RM]

4. The most famous work of John Gardner is narrated by and titled for this character. for 10 points each:

[10] Name this character who raids Heorot, but cannot approach its throne because he is descended from Cain. He dies after a Geat tears his arm off.

ANSWER: Grendel [Opinion differs on whether Grendel can't approach the throne in Heorot or the throne of God, but most say the throne in Heorot]

[10] Grendel and his mother are killed by this Geat, the title figure of an Old English poem. Seamus Heaney wrote an award-winning translation of the poem titled for this man.

ANSWER: Beowulf

[10] This author wrote the essay "Beowulf: the Monsters and the Critics," and his translation of *Beowulf* was released with his *Sellic Spell*. He also wrote *The Silmarillion*.

ANSWER: J(ohn) R(onald) R(euel) Tolkien (do not accept "Christopher Tolkien," who is his son who edits his posthumous works) [CS]

5. Answer some questions about the last Chinese Dynasty for 10 points each:

[10] The Qing Dynasty fought against British forces in this conflict, named after an addictive substance traded by the British East India Company.

ANSWER: Opium War(s)

[10] This group of fighters included a Muslim regiment known as the Kansu Braves that killed a Japanese Diplomat. Identify this group that names a rebellion that was put down by the Eight Nation Alliance.

ANSWER: Boxer(s) (accept Yihequan, Society of Righteous and Harmonious Fist(s), Righteous Harmony Movement, or Yihe Magic Boxing)

[10] This leader supported the Boxers. She opposed the Hundred Days Reform, and was speculated to have poisoned the Emperor to prevent it. Name this dowager empress who was succeeded by Puyi.

ANSWER: Cixi [AZ]

6. This southernmost state in the US contains the volcanic Mauna Kea and Kilauea. For 10 points each:

[10] Name this state home to Iolani Palace, Diamond Head, and Waikiki Beach on Oahu.

ANSWER: Hawaii

[10] This "Garden Isle" is the geologically oldest of the main Hawaiian islands and is the fourth largest of them. It is also the site of the Waimea Canyon State Park.

ANSWER: Kauai [Cow-uh-e]

[10] This explorer was the first European to reach Hawaii, and he also sailed to Australia and New Zealand as the captain of the *Endeavor*.

ANSWER: James Cook [PP]

7. This method of conditioning was first extensively studied by Edward Thorndike. For 10 points each:

[10] Name this form of conditioning. Thorndike's experiments with cats found that positive results reinforce, while negative results discourage, in this non-classical form of conditioning.

ANSWER: Operant conditioning

[10] This experiment by noted coffee salesman John Watson at Johns Hopkins University used operant conditioning to make the title child afraid of things he wouldn't normally be scared of, like furry objects.

ANSWER: Little Albert experiment

[10] John Watson was a member of this school of psychologists, who thought every action was merely a reaction to stimuli with no abstract backing. B.F. Skinner was a "radical" one who wanted to go *Beyond Freedom and Dignity*.

ANSWER: Behaviorism (accept word forms) [CS]

8. In this organ, the medulla oblongata regulates autonomic processes such as breathing. For 10 points each,

[10] Name this organ, which is split into the temporal, frontal, occipital, and parietal lobes and contains the cerebrum, cerebellum, and hypothalamus.

ANSWER: Brain

[10] This disease of the brain commonly affects the elderly and is marked by memory loss. A projected cause of this disease is a buildup of beta-amyloid plaques.

ANSWER: Alzheimer's Disease (prompt on, but do not otherwise reveal, "dementia" or "senility")

[10] This term is used to describe a group of symptoms including forgetfulness, impaired social skills, and thinking abilities. Alzheimer's is one of the prime causes of it.

ANSWER: Dementia (accept **senility**) [RM]

9. Some of this work's most famous episodes may actually be later additions by Antoine Galland. For 10 points each:

[10] Name this work in which the queen Scheherazade tells stories to her husband Shahryar, but ends them on cliffhangers in an attempt to keep her head.

ANSWER: The Arabian Nights or **One Thousand and One Nights**

[10] This figure in the *Arabian Nights* takes diamonds from a roc's nest and is enslaved by the Old Man of the Sea.

ANSWER: Sinbad the Sailor (accept **Sindbad**)

[10] This character from the *Nights* has a greedy brother named Cassim and overhears a band of forty thieves using the secret phrase "Open Sesame."

ANSWER: Ali Baba [TB]

10. This man's forces were duped by the allied Operation Bodyguard. For 10 points each:

[10] Name this "Desert Fox" who led Nazi forces during against the British in Africa during WWII.

ANSWER: Erwin **Rommel**

[10] This British general opposed Rommel during his campaign in Africa. He co-led Operation Torch with George S. Patton and won the Battle of El Alamein.

ANSWER: Bernard **Montgomery**

[10] Accusations that Rommel had attempted to assassinate this leader led to his suicide. One attempt to assassinate this leader occurred at Wolf's Lair and was known as Operation Valkyrie.

ANSWER: Adolf **Hitler** [HP]

11. After Helle falls into the sea, Phrixus gives this item to King Aeetes on Colchis. For 10 points each:

[10] Name this object, which Pelias will exchange for the throne of Iolcus. To receive it, dragon's teeth have to be sown with fire-breathing bulls. It was made from a flying ram.

ANSWER: **Golden Fleece**

[10] This priestess of Hecate helps Jason retrieve the golden fleece, and tries to marry him. He goes after Glauce instead, and she kills her with a poisoned dress and also kills Jason's children.

ANSWER: **Medea**

[10] These people, the subject of Apollonius Rhodius' most famous work, hunt after the Golden Fleece. They include Castor and Pollux, and sail through the Symplegades in a ship they are named for.

ANSWER: **Argonauts** [GP]

12. In this story, one character gives up her tongue in order to win the love of a prince. For 10 points each:

[10] Name this fairy tale in which that character later turns into sea foam and dies, after drinking the potion of a Sea Witch.

ANSWER: *The **Little Mermaid***

[10] The author of *The Little Mermaid* is from this country. Isak Dinesen, the author of "Babette's Feast" and *Out of Africa*, is also from this country, as is Soren Kierkegaard.

ANSWER: **Denmark**

[10] *The Little Mermaid* was written by this author who also wrote *The Snow Queen* and *The Princess and the Pea*.

ANSWER: Hans Christian **Andersen** [PP]

13. This quantity has dynamic and kinematic forms, and Newtonian fluids have a constant value for this. For 10 points each:

[10] Name this quantity that is zero for superfluids and is the measure of a fluid's resistance to flow.

ANSWER: **Viscosity** (accept **viscous forces**)

[10] This other force that opposes motion has a coefficient symbolized with mu and converts kinetic energy into heat.

ANSWER: Friction

[10] For any object lying perpendicular to the ground, this force equals mass times the acceleration due to gravity. It is always perpendicular to the contact force and is proportional to the frictional force.

ANSWER: Normal Force [EF]

14. This piece is often paired with a gigue in the same key as it. For 10 points each:

[10] Name this piece in which the melody is repeated over and over by different instruments. Its melody is copied in “Three Blind Mice” and Gustav Mahler’s 1st symphony.

ANSWER: Pachelbel’s Canon in D (do NOT mention “Pachelbel” if the team does not answer with it)

[10] This composer of *Canon in D* also wrote the piece *Hexachordum Apollinis*.

ANSWER: Johann Pachelbel

[10] Mahler rewrote this song into a minor key for the third movement in his *Titan* symphony. This song in canon form is about a monk who overslept and is being woken up.

ANSWER: Frere Jacques (Accept Friar John, Brother John, or Friar James) [HP]

15. This scientist famously traveled in a vessel called the HMS *Beagle*. For 10 points each:

[10] Name this naturalist who studied wildlife in the Galapagos to establish his theory of evolution by natural selection.

ANSWER: Charles Darwin

[10] Darwin studied these namesake birds while in the Galapagos, classifying them by beak shape.

ANSWER: Finches

[10] This type of evolution happens when a single species rapidly diversifies in a variety of ways, each slightly altered to be more suitable for its lifestyle.

ANSWER: Adaptive Radiation [RM]

16. For 10 points each, name these people who became accidental memes:

[10] Charlie Puth and Wiz Khalifa were definitely the best choices to memorialize the tragic death of this “Fast and Furious” star in “See You Again.”

ANSWER: Paul Walker

[10] Rick Harrison never knows what going to come through the door of one of these establishments where he works with his Old Man and son “Big Hoss.”

ANSWER: Pawn Shop (accept Gold and Silver Pawn Shop; generously accept Pawn Stars even though that’s not what’s asked for) [This was really big in August 2016 for whatever reason]

[10] This director is mocked for saying “It’ll never beat Titanic,” “every frame is so dense,” and “Jar Jar is the key to all of this,” concerning certain prequels. He also directed *American Graffiti*.

ANSWER: George Lucas [CS]

17. This constant is often used in calculating compound interest. For 10 points each:

[10] Name this constant, which is found in the base of the natural logarithm and is approximately 2.72.

ANSWER: e (do NOT accept Euler’s constant but accept Euler’s number)

[10] The number e is defined through one of these operations. This operation of x to infinity of $2x^2/(3x^2+1)$ is $\frac{2}{3}$.

ANSWER: Limit

[10] Stirling's approximation approximates one of these functions as "n times the quantity the natural logarithm of end quantity minus n." When evaluated for n , this function's value is the product of "n and all of the whole numbers less than n."

ANSWER: Factorial [RC]

18. This man argued that national power overruled state's rights in a debate with Robert Hayne. For 10 points each:

[10] Name this Massachusetts senator who was known for his oratory skills. He signed a treaty with the Baron Ashburton regarding the Canadian border.

ANSWER: Daniel Webster

[10] The Webster-Ashburton treaty regarded the border of this state with Canada. Lumberjacks in this state fought the Aroostook War.

ANSWER: Maine

[10] Webster also was an alumni of this college. He defended it in a Supreme Court case about the usage of the contract clause with regards to private entities.

ANSWER: Dartmouth College [GP]

19. This play takes place in Harry Hope's saloon. For 10 points each:

[10] Name this play which features a collection of bar patrons discussing their "pipe dreams." In this play, the hardware salesman Hickey admits to murdering his wife.

ANSWER: *The Iceman Cometh*

[10] This American playwright wrote *The Iceman Cometh* as well as *Long Day's Journey Into Night*.

ANSWER: Eugene O'Neill

[10] O'Neill's *Mourning Becomes Electra* retells this Aeschylus trilogy. O'Neill's "The Hunted" corresponds to its *The Libation-Bearers*, and his "The Haunted" connects to its *The Eumenides*.

ANSWER: *The Oresteia* [TB]

20. Give the following jazz trumpeters, for 10 points each:

[10] This trumpeter's bands included his All-Stars, Hot Seven, and Hot Five. He recorded "Heebie Jeebies" and "Hello, Dolly," and was nicknamed Satchmo.

ANSWER: Louis Armstrong

[10] This composer of "Manteca" and "Salt Peanuts" titled some albums after his song "Groovin' High." He founded bebop with Charlie Parker, and puffed out his cheeks out a lot when playing a bent trumpet.

ANSWER: John Birks "Dizzy" Gillespie

[10] This trumpeter and composer of *Blood on the Fields* and "Black Codes" is currently the artistic director of jazz at the Lincoln Center. His brother Branford plays the saxophone.

ANSWER: Wynton Marsalis (do not accept any other Marsalises) [CS]

Tiebreaker:

21. This sect's holy texts include the *Blue Cliff Record* and the *Gateless Gate*, and its founder is sometimes called the "Blue-Eyed Barbarian." For 10 points each:

[10] Name this sect of Buddhism founded by Bodhidharma which emphasizes meditation over scriptural study. It originated in China, but is more commonly associated with Japan.

ANSWER: Zen Buddhism (accept **Chan** Buddhism)

[10] The Zen sect belongs to this largest branch of Buddhism, known as the "Greater Vehicle." The Pure Land sects also belong to this branch.

ANSWER: Mahayana

[10] Zen is known for using these paradoxical statements that illustrate the shortcomings of reason. A famous example of one of these statements is "what is the sound of one hand clapping."

ANSWER: koans [TB]