

Scobol Solo 2021

Packet 8 (Round 8)

1. The tensor named for this person equals the Ricci [REE-chee] curvature tensor minus half the scalar curvature times the metric tensor. That tensor is used in the field equation named for this person, which includes the cosmological constant that this person mistakenly abandoned. The gravitational red-shift was formerly named for this person because it was based on his equivalence principle. Another equation credited to this person introduced the concept of rest mass. Name this scientist who developed the concept of mass-energy equivalence and eventually developed that idea into general relativity.

Answer: Albert Einstein

2. This poet wrote “But someday somebody will stand up and talk about me, and write about me” in the poem “Note on Commercial Theatre”. In another poem, this person wrote “America never was America to me, and yet I swear this oath—America will be!”. That poem, which states “Let America be the dream the dreamers dreamed”, is entitled “Let America Be America Again”. Another poem by this writer ends with the question “Or does it explode?”. That poem provided the title of the Lorraine Hansberry play *A Raisin in the Sun*. Name this writer whose poem “Harlem” asks “What happens to a dream deferred?”.

Answer: (James Mercer) Langston Hughes

3. In Aztec myth, Tecciztecatl [tek-seess-TEK-ah-tull] became the god of this object after he entered a fire more slowly than Nanahuatzin [nah-nah-WAHT-zin] and had a rabbit thrown at him. In Eastern folklore, this object is the home of a rabbit with a mortar and pestle, and it is also the home of a goddess who had been married to the archer Houyi [HOH-yee]. Greek mythology sometimes conflated goddesses who represented this object: Hecate [HEH-kuh-tee], Artemis, and Selene [seh-LEE-nee]. The Roman goddess of this object was Luna. Name this object that was sometimes represented as a feminine version of the Sun.

Answer: (Earth’s) Moon [accept Luna before “Luna”]

4. In one movie by this director, the camera view starts at the top of a staircase and pans down to focus on a key in Alicia Huberman’s hand. This director ended that film with Huberman and T. R. Devlin—played by Ingrid Bergman and Cary Grant—leaving Alexander Sebastian, who is played by Claude Rains. Another film by this director is based on a Robert Bloch novel and has a famous scene that begins with Marion Crane, who was played by Janet Leigh [lee], taking a shower. Much of that movie is set at the Bates Motel, where stabbings take place. Name this English director of *Notorious* and *Psycho*.

Answer: Alfred (Joseph) Hitchcock

5. Mammalian respiratory complex I [1] is sometimes named for this organelle because it moves protons inside this organelle. The origins of this organelle and the chloroplast is explained by endo-symbiotic [EN-doh-sim-by-AH-tik] theory, which claims that this organelle evolved from pro-karyotes. This organelle has several folds called cristae [KRIS-tee]. Like nuclei and plastids such as chloroplasts, this cell organelle has a double membrane. Though most DNA is in a cell's nucleus or plastids, this organelle has its own DNA. Name this organelle that generates adenosine [uh-DEE-noh-seen] tri-phosphate, which is why it is nicknamed the “powerhouse of the cell”.
- Answer: mitochondrion or mitochondria

Check the score.

6. This person's last known words were “We are running north and south on line, listening 6210 [‘sixty-two ten].” This person wrote the memoirs *The Fun of It* and *20 Hours, 40 Minutes*. This person's most famous achievement was made in 1932 in a Lockheed Vega 5B. This person's last known whereabouts were with Fred Noonan near Howland Island. This person wrote a letter to Arthur Hays Sulzberger when *The New York Times* called this person “Mrs. Putnam” despite her wishes. Name this woman whose body was never found after she attempted to fly around the world.
- Answer: Amelia (Mary) Earhart

7. This state's east border is the site of Mud Lake and Lake Traverse. Almost all of the Lake Traverse Indian Reservation is in this state. This state's Oglala Lakota County contains Red Shirt Table, which is partly in the Pine Ridge Indian Reservation and is the highest point in Badlands National Park. This state also contains most of the Black Hills National Forest, including Deadwood, though some of the forest extends west into Wyoming. Name this location of Mount Rushmore whose capital is Pierre [“peer”].
- Answer: South Dakota

8. Jan [yahn] Vermeer painted two portraits of ladies at virginals, a *Woman with a Lute*, and a girl playing one of these instruments while she is sitting inside in front of a painting of a tree. This instrument is played improperly by a man wearing a black hat over a white headband while sitting on a green bench in Édouard Manet's [ayd-war man-ay'z] *The Spanish Singer*. Another painting shows a man playing this instrument while sitting with his legs crossed and his head tilted sideways. Name this instrument played by an *Old* man in a painting from Pablo Picasso's Blue Period.
- Answer: (acoustic) guitar(s)

9. A short story by this writer begins in 1860 at Maryland Private Hospital for Ladies and Gentlemen, where Doctor Keene tells a new father “I don’t want to see you or any of your relatives ever again!”. This author had that story end decades later in a white crib. A novel by this author is about a man originally from North Dakota who had been stationed in Louisville, where he had a relationship with his cousin, Daisy Buchanan. Much of that novel is set at West Egg on Long Island. Name this author who wrote about a person who ages backwards in “The Curious Case of Benjamin Button” and wrote about the Jazz Age in *The Great Gatsby*.

Answer: F(rancis) Scott (Key) Fitzgerald

10. This battle was fatal to Clarence Tinker, who was the first Native American U.S. major-general. During this battle the USS *Hammann* and USS *Yorktown* were destroyed. The U.S. confirmed an attack would take place at the location of this battle by broadcasting a message that the location was short of water and then intercepting a message calling the location “A.F.”. This battle took place one month after the Battle of the Coral Sea and was much more decisive, and it was two months before the Battle of Guadal-canal. Name this U.S victory during World War II at an atoll in the center of the Pacific Ocean.

Answer: Battle of Midway

Check the score.

11. One-way tables are sometimes named for this quantity or the relative version of this quantity, and when doing so, a chi [ky]-square statistic measures differences between observed and expected values of this quantity. This quantity is the namesake of a school of thought in statistics that is often contrasted with Bayesian [BAY-zee-un] statistics. This quantity is often the dependent variable in a histogram and graphed on the y -axis. The mode of a distribution is the value with the highest value of this quantity. Name this measure of how often an event occurs.

Answer: frequency

12. This program is supported by the H.I. and S.M.I. trust funds. One effort to control the costs of this program is the Shared Savings Program, which uses accountable care organizations. Some gaps in this program are covered by Advantage Plans, which are also called its Part C. Over 100 congresspeople support an amendment to lower the eligibility age for this program from 65 to 60. Senator Bernie Sanders is attempting to expand this program to cover vision, hearing, and dental benefits. Name this public medical insurance for elderly people.

Answer: Medicare [do not accept “Medicaid”]

13. Walter Hartright is watching this type of place when he sees two women, and he eventually comforts one woman by saying he is staying at Limmeridge House. That woman, who lives in an asylum, is Anne Catherick in Wilkie Collins’s *The Woman in White*. In one of these places, Ebenezer Scrooge asks “Why show me this, if I am past all hope?”. This is the last place that Scrooge is taken to by the Ghost of Christmas Yet to Come in *A Christmas Carol*. In another one of these places, Hamlet says “Alas, poor Yorick!”. Name this location that in *Hamlet* is where several skulls are excavated.

Answer: graveyard(s) or cemetery(/ies) [prompt on churchyard(s); do not prompt on “church”]

14. This country’s independence was described in the Plan of Iguala [ee-GWAH-lah], which was written by its second president, Vicente Guerrero, and its first emperor, Agustín de Iturbide [ah-goo-STEEN day ee-tur-BEE-day]. This country established its Centralist Republic under Miguel Barragán after its first government kept swinging back and forth between Valentín Gómez Farías and General Antonio López de Santa Anna. Eventually, France opposed control by Benito Juárez by having Maximilian declared the emperor of this country. In recent years, this country has been led by Enrique Peña Nieto and Andrés Manuel López Obrador. Name this country that borders the United States.

Answer: Mexico [or United Mexican States or Estados Unidos Mexicanos]

15. Salts of this metallic element are effective at blocking and contracting sweat pores, so they are commonly used in anti-perspirants. This metal’s oxide—which combines with impurities to form emery, sapphire, and ruby—is corundum. After oxygen and silicon, this metal is the third-most prevalent element in Earth’s crust. This element is isolated by using cryolite [“CRY-oh-light”] as a solvent on this element’s oxide, which is taken from bauxite [BAWK-“site”]. That process, which often follows the Bayer process, is the Hall–Héroult [air-awl] process. Name this metallic element commonly used to make baseball bats, beverage cans, and food-service foil.

Answer: aluminum [or aluminium; accept Al]

Check the score.

16. This composer wrote both the *Concerto in E-Flat Major for Trumpet and Orchestra* and a *Trumpet Concerto in E-flat Major* for the performer Anton Weidinger [“VIE”-deen-gur]. This composer wrote the oratorios [or-uh-TOR-ee-ohz] *The Seven Last Words of Our Saviour on the Cross* and *The Creation*. One of this composer’s pieces is known for a loud chord that occurs at the end of a repeated quiet set of notes in its *Andante* movement. That piece is the second of this composer’s 12 London symphonies. Name this Austrian composer who wrote 106 symphonies, including the *Surprise*.

Answer: Franz Joseph Haydn [“HI-din”]

17. The natural type of this situation is sometimes caused by network externalities, such as incompatibility issues with technology. The natural type of this situation is also caused by economies of scale, especially when there is a ceiling on demand. This market situation is often caused by intellectual property policies such as copyrights and patents. This situation leads to increased prices and poor customer service because consumers lack alternatives. Name this situation in which there is no market competition because a particular good only has a single seller.

Answer: monopoly/ies (market) [or monopolization]

18. One of these animals named Katla is controlled by Tengil using a trumpet in Astrid Lindgren's *The Brothers Lionheart*. In another work, one of these animals is enraged when a slave steals its cup, leading to a battle in which Wiglaf helps Beowulf kill this animal, but Beowulf is fatally wounded during the fight. According to *Argonautica*, teeth from this animal were shared between Cadmus and Aeëtes [ee-EE-teez], and those teeth turned into warriors when they were planted. Name these creatures that exist in stories throughout the world and often have the power to breathe fire.

Answer: dragons [prompt on serpents]

19. This king, who is not Francis I, married Maria Theresa of Spain despite being in love with Marie Mancini [mahn-see-nee], and he fathered many children with Louise de La Vallière [loo-ees deh lah vah-lee-air] and Madame de Montespan [mohn-teh-spahn]. This king's armies fought the Nine Years' War when several countries opposed to his expansionism formed the League of Augsburg. This king signed the Edict of Fontainebleau [fahn-ten-bloh], which revoked the Edict of Nantes [nawnt] and was part of this king's decision to not tolerate Protestants. This king's First Ministers included Jean-Baptiste Colbert and Cardinal Mazarin [mah-zah-ran]. Name this king who ruled France for 72 years and was nicknamed the Sun King.

Answer: Louis XIV [loo-ee "the 14th"] [prompt on Louis the Great; prompt on the Sun King before the end; accept Louis le Grand]

20. Sidereal ["sigh-DEAR"-ee-ul] time is sometimes named for these objects and is based on the assumption that many of these objects are not moving in space. The collapse of these objects is the most common setting of the *r*-process, which creates many of the heavier elements, and most elements are created in these objects. The luminosities versus the effective temperatures of these objects is plotted on a Hertzsprung–Russell diagram. Most black holes are formed by the collapse of these objects, which also causes a supernova. Name these astronomical objects, some of which are classified as giants or dwarfs, and the nearest one of which is the Sun.

Answer: stars

This is the end of regulation. Check the score. If it is tied, proceed to overtime tossups. If it is not tied, the game is over.

^{TB}21. One of these animals is given to Kenneth McLaughlin when it looks like he is about to fail 5th grade, and Kenneth eventually saves the animal and completes his English essay. That novel was written by Mary O’Hara. After finding a buzzard feeding on one of these animals, Jody Tiffin kills the buzzard in “The Gift”, which is part of a longer book by John Steinbeck. Alec Ramsay is stranded on an island with one of these animals in a book by Walter Farley, and the animal eventually races against Cyclone and Sun Raider. Name this type of animal portrayed in the novel *My Friend Flicka*.

Answer: horses [accept pony/ies or colts or stallions]

(The Steinbeck book is *The Red Pony* and the Farley book is *The Black Stallion*.)

If the score is still tied, continue. If it is not tied, the game is over.

^{TB}22. Recent research in South Korea supports the idea that these events can be predicted by measuring radon in the air. The deep-focus types of these events occur at Wadati–Benioff [[wah-DAH-tee BEN-ee-awff](#)] zones. There are sometimes swarms of these events, including ones near Riverside, California in recent years, and there is debate as to how much these events are caused by fracking. Like volcanic eruptions, these events are common around the Ring of Fire that surrounds much of the Pacific Ocean. These events create P waves and S waves. Name these events that often happen along geologic faults and can be measured on the Richter scale.

Answer: earthquakes [prompt on tremors or seisms]

If the score is still tied, continue. If it is not tied, the game is over.

^{TB}23. This letter is the name of an anarchist played by Hugo Weaving in a 2005 film that involves Guy Fawkes masks. During World War II, the allies often arranged their fingers to form this letter when they were successful. In many formulas, this letter represents a quantity equivalent to electric potential difference. This letter represents the vector whose magnitude is speed. Name this letter that comes between ‘U’ and ‘W’.

Answer: v

There are no more overtime questions available. If the score is still tied, contact the control room for further instructions. If it is not tied, the game is over.