

Scobol Solo 2020

Packet 6 (Round 6)



1. If these mathematical things are locally equal to a convergent power series, then they are called “analytic”. Solutions to differential equations are these things. These things, which are not matrices, can only be invertible if they are bijective [by-JEK-tiv], which means they must be both one-to-one and onto. These things are relations whose graphs pass the vertical line test because each input corresponds to a single output. Name these entities that map their domain to their range.

Answer: functions [prompt on mappings]

2. In a short story by this writer, a couple boards a train in San Antonio just after getting married. That story is about a rivalry between the policeman Jack Potter and the gun-slinger Scratchy Wilson, and it ends with Wilson deciding not to kill Potter. A novel by this author begins with a soldier going to wash a shirt and returning with news that his military company is going to move. In that novel, this author wrote about Jim Conklin dying after being shot, and the title character being hit in the head with a rifle, creating the novel’s title injury. Name this author of “The Bride Comes to Yellow Sky” who wrote about Henry Fleming in *The Red Badge of Courage*.

Answer: Stephen Crane

3. As U.S. president, this person signed the Military Peace Establishment Act, which created West Point Military Academy. A dispute with Britain led to this president signing the Non-Importation Act, and he signed a stronger law after the *Chesapeake-Leopard* affair. After this person’s wife died, he fathered children with her half-sister Sally Hemings, who was one of his slaves. This person became president after several tie votes in the Electoral College during the election of 1800, which he eventually won over Aaron Burr. Name this principal author of the Declaration of Independence and third president of the United States.

Answer: Thomas Jefferson

4. One painting by this artist shows a blue rag hanging off the end of a small table with a green tablecloth. That table has a lot of stale bread on it, and the only person that this artist depicted in that painting is a woman pouring milk into a bowl. The only person in another painting by this artist is wearing a gold jacket with a white collar beneath it. That person’s body faces to the left, but she looks to the viewer with wide open eyes. This artist depicted that woman wearing a blue and gold turban and a piece of jewelry. Name this Dutch painter of *The Milkmaid* and *Girl with a Pearl Earring*.

Answer: Jan Vermeer [yahn vur-MEER] [or Johan Vermeer or Johannes Vermeer]

5. Neutrinos interacted with these particles in the Cowan-Reines [KOH-un RY-ness] neutrino experiment. The type of fusion that occurs in the Sun is named for two of these particles, and it both starts with two of these particles and ends with the release of two of these particles. Inverse beta decay combines this particle with an electron anti-neutrino to form a neutron and a positron. In one form of beta decay, this particle turns into a neutron, a positron, and a neutrino. This particle consists of two up quarks and one down quark. This nucleon has electric charge. Name this positively charged particle that occurs with neutrons in atomic nuclei.

Answer: protons

Check the score.

6. Though Abraham Lincoln never lived in this state, it has 16 sculptures dedicated to him along its Lincoln Financial Sculpture Walk. This state's Naugatuck [NAW-guh-tuk] River goes through a city historically known for manufacturing brass, Waterbury. An old whaling ship called the *Charles W. Morgan* is used as a museum at this state's Mystic Seaport. Many of this state's most populous towns—such as Norwalk, Bridgeport, and Stamford—are located in its southwest corner near New York City. Name this New England state whose capital is Hartford.

Answer: Connecticut

7. This work contains the line “Yield not to misfortunes, but advance all the more boldly against them.” At one point in this work, the hero is guided by two doves sent by Venus. That happens when the hero of this work is sent to find a gift for Proserpina [proh-ser-PEE-nah] by the Cumaean Sibyl [koo-MEE-in SIB-ill]; that gift is the Golden Bough. This work ends with the death of Turnus, which avenges the death of Pallas. Earlier in this work, a queen stabs herself while she is on a funeral pyre. That queen of Carthage is Dido [“DIE-doe”]. Name this epic poem about the founding of Rome written by Virgil.

Answer: *The Aeneid* [uh-NEE-id] [or *Aeneis*]

8. Rulers of this dynasty were allowed to choose their successors until the passage of the Pauline Laws in 1797. The member of this dynasty who passed those laws was assassinated by General Bennigsen and others at St. Michael's Castle. Another member of this dynasty gained territory by the Treaty of Adrianople [AY-dree-uh-NOH-pull] after allying his country with England and France during the Greek War of Independence. The last ruling member of this dynasty married a granddaughter of Queen Victoria and had a son with hemophilia. His wife relied on Rasputin to cure the child, who was the heir to Nicholas II. Name this last dynasty that ruled Russia.

Answer: (Holstein-Gottorp-)Romanov dynasty or the Romanovs

9. This instrument plays a long solo before the aria “Regnava [rayn-YAH-vuh] nel silenzio” in Gaetano Donizetti’s *Lucia di Lammermoor* [loo-CHEE-ah dee lahm-mairm-moor]. John Thomas performed on and composed for this instrument, including the song “Watching the Wheat”, which is based on a Welsh folk song. The Welsh type of this instrument has three rows of strings, while the Celtic type is smaller than other types and has wire strings. This instrument often has strings that make an angle with the soundboard, and there are often 47 strings. Name these instruments that are often about five feet tall.

Answer: harps

10. According to Chinese mythology, Pangu [pan-goo] used one of these objects to create *yin* and *yang*. A story about Hermes states that he found gold and silver versions of this kind of object when he dove into a river, but the person he dove for was honest about which one of these objects he lost, so he got to keep all three. An American legend states that the Grand Canyon was created by dragging one of these objects. That large object of this type was carried by the person who traveled with Babe the Blue Ox. Name this object owned by Paul Bunyan, who often used it to chop down trees.

Answer: axes

Check the score.

11. These particles cause beryllium [buh-RILL-ee-um] to emit neutrons, which is a common way to start nuclear reactions. The release of these particles by americium [am-uh-REE-see-um]-241 is used to create an electron current in smoke detectors. After protons, these particles are the next most common component of cosmic rays. Patrick Blackett achieved the first artificial nuclear transmutation by firing these particles at nitrogen to create oxygen and protons. The atomic nucleus was discovered by firing these particles at gold foil in Rutherford’s gold foil experiment. Name this particle made of two protons and two neutrons.

Answer: alpha particles [accept alpha radiation or alpha rays; accept helium nuclei or helium nucleus; prompt on helium]

12. In one play by this writer, the title object is a birthday present, and its recipient threatens to use it to strike Mrs. Erlynne across the face. This writer later has Mrs. Erlynne reveal that she is the mother of the recipient of the title object. In another play by this writer, Jack says “When one is in town one amuses oneself. When one is in the country one amuses other people.” This writer wrote about Jack saying those words to Algernon Moncrieff, who soon learns that Jack takes on a different identity when he is in London. Name this Irish playwright of *Lady Windermere’s Fan* and *The Importance of Being Earnest*.

Answer: Oscar (Fingal O’Flahertie Wills) Wilde

13. This leader's oldest son, Crispus, was put in charge of troops in Gaul but was eventually killed on this leader's orders. An attempt to replace this leader with Martinian [mar-TIN-ee-un] was foiled when this leader won the Battle of Chrysopolis [kry-SAH-puh-liss]. After that victory, this leader ordered the execution of his colleague Licinius [lih-SIN-ee-uss]. Some earlier victories by this leader, including Turin and Verona, were over his rival Maxentius [mak-SEN-shee-uss]. This person claimed that he saw a cross in the sky before his victory at Milvian Bridge. Name this emperor who reunited the eastern and western empires in the fourth century and who was the first Christian emperor of Rome.

Answer: Constantine I or Constantine the Great [or Flavius Valerius Constantinus or Constantinus I or Constantinus Magnus; prompt on Constantine or Flavius Constantinus]

14. This person wrote "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest." That quote is in a chapter this person wrote explaining why there is a division of labor, which follows this person's praise of the division of labor. This person makes his point by explaining the productivity of a pin factory. Later in the same book, this person used the analogy of a person who is acting in self-interest being led by an "invisible hand" to promote society. Name this 18th-century Scottish economist who wrote *The Wealth of Nations*.

Answer: Adam Smith

15. At the beginning of the last act of an opera by this composer, Arnold sings "Asile héréditaire" [ah-seel eh-reh-dee-tair] and then sings another song about vengeance. For that opera, which is based on a Friedrich Schiller play, this composer wrote "March of the Swiss Soldiers". For another opera, this composer wrote the aria "Largo al factotum", in which the title character sings his name repeatedly to mock people who ask him for favors. In that opera, Rosina falls in love with Lindoro, who is Count Almaviva in disguise. Name this composer who wrote *William Tell* and *The Barber of Seville*.

Answer: Gioachino Rossini

Check the score.

16. Based on data from a former orbiter of this planet and recent research into olivine [OH-lih-veen], in early 2020 scientists announced that this planet had recent volcanic activity. The first fly-by of this planet was made by Mariner 2 after a failed attempt by Mariner 1. The Ovda Regio [OHV-duh REE-jee-yoh] and Thetis Regio [THEE-tiss REE-jee-yoh] are part of this planet's Aphrodite Terra, which is similar to a continent. This planet's largest mountain, Maxwell Montes, is on Ishtar Terra. This planet's atmosphere creates the strongest greenhouse effect in our Solar System. This planet is the larger of the two moonless planets in our solar system. Name this second planet from the Sun.

Answer: Venus

17. When this character tries to hang on to his children, his brother-in-law tells him “Don’t try to be in charge of everything. Your life has lost the power you once had.” Earlier, this character is told “You yourself are the very man you’re looking for” by the blind prophet Tiresias [“tie”-REE-see-uss]. This character is the father of Ismene [iss-MEE-nee] and Antigone [an-TIG-uh-nee], the latter of whom leads him to Colonus [kuh-LOH-nuss]. Name this King of Thebes [theebz] who marries Jocasta [joh-KASS-tuh] and finds out that she is his mother in a trilogy of plays written by Sophocles [SAWFF-oh-kleez].
- Answer: Oedipus (Rex)

18. This man’s third wife was also Samora Machel’s [muh-SHEL’z] second wife, which made her the only modern woman to be the first lady of two countries. This person defended himself by saying “It is an ideal which I hope to live for. But, my lord, if needs be, it is an ideal for which I am prepared to die.” This person’s autobiography is *Long Walk to Freedom*. This person was convicted at the Rivonia Trial and spent 27 years in prison, most of which was on Robben Island. A few years after being released, this person shared a Nobel Peace Prize with F. W. de Klerk after they ended apartheid. Name this person who in 1994 became the first Black president of South Africa.
- Answer: Nelson (Rolihlahla) Mandela

19. Some animals, but not mammals, have transitory large examples of these things described as “lamp-brush”. The purpose of these things is identified in Boveri-Sutton theory. Locations on these things are specified by band numbers along either their p or q region. Barbara McClintock identified the telo-mere and centro-mere regions of these things, and she worked with Harriet Creighton to show that parts of these things cross over. Homologs are pairs of these things that exist in diploid organisms. In most human females, two of these things are designated “X”, while in most males, one is designated “X” and one “Y”. Name these structures that carry genes.
- Answer: chromosomes

20. In October 2020, this leader said “Our people have placed trust—as high as sky and as deep as sea—on me, but I have failed to always live up to it satisfactorily. I am really sorry for that.” This leader is rumored to be having an affair with the leader of the Moran Hill Orchestra, who recently has been seen in public more than this leader’s wife and his sister. Donald Trump praised this person’s “beautiful letters”, and the two of them had a 2018 meeting in Singapore and 2019 meetings in Hanoi and at the Demilitarized Zone. Name this person who since 2011 has been the Supreme Leader of North Korea.
- Answer: Kim Jong-Un [prompt on partial answer]

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.

TB21. An excess of this element in the body can lead to a deficiency of selenium [suh-LEE-nee-um], and vice versa. This element is never isolated in nature, but it is combined with sodium nitrate in Chile salt-peter. The name of this element means “violet” in Greek because of the color of its vapor. The compound formed by this element and silver is used for cloud seeding and developing photographs. This element is necessary in the diet to produce thyroid hormones and avoid goiter. Name this halogen that is below bromine and above astatine on the periodic table.

Answer: iodine [accept I]

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

TB22. In 1979 the person who held this position made a visit to Poland that is sometimes credited with inspiring the end of Soviet control over the country. When the person with this position entered Poland, he kissed the ground, was driven past 2 million people, and gave a speech to a quarter of a million people. The people who hold this position were first given significant land holdings by the Donation of Pepin in 756. Starting in 1095, the holders of this position called for a series of armed pilgrimages to Jerusalem. Name this position that has been held by John Paul II and Urban, and which is the head of the Catholic church.

Answer: pope or supreme pontiff [or Roman pontiff or Bishop of Rome or Pontifex Maximus; prompt on bishop]

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

TB23. During this month in 1969, Woodstock took place. Women’s Equality Day is in this month and celebrates the passage of the Nineteenth Amendment. The name of this month is also a word that means “respected and impressive”. This month shares its name with the first name of the playwright of *The Pittsburgh Cycle*, whose last name was “Wilson”. Name this eighth month of the year.

Answer: August

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.