

# Scobol Solo 2017

## Packet 14 (Round 14)



1. This writer described Gordon Comstock's break from his advertising copywriting career in the novel *Keep the As·pi·dis·tra* [ass-pih-DISS-truh] *Flying*. In another novel by this author, the protagonist works with a lexicographer [lek-sih-KAH-gruh-fur] named Syme. In that novel, it is not known whether the author of *The Theory and Practice of Oligarchical Collectivism* is a real person or a creation of O'Brien. In another novel by this writer, the characters adopt Seven Commandments after revolting against the farmer Mr. Jones. In that novel, this writer develops a rivalry between Napoleon and Snowball, who are both pigs. Name this British author of *Nineteen Eighty-Four* and *Animal Farm*.

Answer: George Orwell [or Eric Arthur Blair]

2. This procedure is *impossible* if there is a prime number that divides all coefficients *except* the leading coefficient and whose square does not divide the constant term; that criterion is named for Gotthold Eisenstein [GOHT-"hold" "EYE-sun-stein"]. If the coefficients are real, this process can always be done until the resulting pieces are linear or quadratic, as a corollary of the fundamental theorem of algebra. This process is done separately to the numerator and denominator of rational functions to find holes and asymptotes. Rules like "sum of cubes" and "difference of squares" are special situations for this general procedure. Name this procedure in which a polynomial is broken down into a product of lower-degree polynomials.

Answer: factoring polynomials [accept reducing polynomials; accept answers that add "over [something]" to the end]

3. This is the most famous building on the Piazza dei Miracoli [pee-AHT-sah day mee-rah-KOH-lee], or Field of Miracles, near a large cathedral and very close to the Putti [POOT-tee] Fountain. The bottom story of this building contains 15 marble arches, and the next six stories up each contain 30 marble arches. This building has a 297-step spiral staircase leading to a bell tower on its top floor. Construction of this building started in 1173 and lasted about 200 years. It is in a city about 50 miles west of Florence. This building was constructed on soft ground with too little foundation, which explains its most famous quality. Name this tilted building.

Answer: Leaning Tower of Pisa [or Tower of Pisa or Torre pendente di Pisa or pendente di Pisa]

4. During the building of one of these things in 1931, the fossils of Minnesota Woman were discovered. Carl Fisher raised money for one of these things named for Abraham Lincoln. The economy of Cuba, Missouri suffered after one of these things was decommissioned. Construction techniques for building these things improved greatly in the early 1800s due to work by John MacAdam to improve drainage. In 1956, President Eisenhower signed a bill spending billions of dollars to construct a system of these things. One of these things numbered 66 started in Chicago and was the subject of a popular song. Name these things some of which in Germany are called *autobahns*.

Answer: roads [or highways or parkways or expressways; accept streets or similar answers; accept Interstate Highways or Interstates after “Eisenhower”; accept U.S. Routes after “Cuba”]

5. This territory is the site of the early trading post Tamão [tah-MAO-oo]. Possession Point is the location where Commodore James Bremer first claimed this territory for Britain in 1841. Part of this region is known as New Territories and was leased to Britain in 1898 for 99 years. The part of this territory called Kowloon was given to Britain in one of the Unequal Treaties. The island part of this region was given to Britain after the First Opium War. Like Macau, this territory is now classified as a Special Administrative Region. Name this territory on the Pearl River Delta which has some autonomy but is part of the People’s Republic of China.

Answer: Hong Kong (Special Administrative Region of the People’s Republic of China)

### ***Check the score.***

6. Before the harvest begins each year, the characters in this novel thank the earth goddess who is the source of all fertility by washing all the cooking pots and throwing out old yams. In this novel, the Oracle of the Hills and the Caves, also called Agbala, sanctions a war that causes a village to hand over a virgin and a 15-year-old boy to make peace. Agbala tells Unoka to work like a man. The protagonist of this novel, who is Unoka’s son, has three wives and takes in that boy, Ikemefuna [IK-uh-MAY-foo-nah]. In this novel, Mr. Brown and Reverend Smith travel as missionaries to Umuofia [oom-WOH-fee-uh]. Name this Nigerian novel about Okonkwo, written by Chinua Achebe.

Answer: *Things Fall Apart*

7. This property was measured as negative under certain conditions for modified graphite at the nano-scale in a 2012 article by Zhao Deng. The maximum acceleration of a self-propelled vehicle equals gravitational field strength times this quantity. Once two surfaces are selected, there are two versions of this property, of which the static version is usually higher than the kinetic version. This quantity is usually very low when one of the materials is Teflon. This coefficient equals the ratio of the force it is named for divided by the normal force. Name this coefficient that measures how much opposition there is when one object is dragged over a surface.

Answer: coefficient of (static or kinetic) friction [accept just friction after “coefficient”; accept frictional coefficient]

8. In early 2017, this country negotiated with Russia and Turkey at meetings in Kazakhstan to create de-escalation zones in Syria. This country’s foreign minister, who wrote in *The Atlantic* in October 2017 that his country “has not attacked another country in nearly three centuries”, is Javad Zarif [JAH-vud zah-REEF]. A group of countries called “P5+1” [“P five plus one”] lifted sanctions against this country in 2015 despite statements by Benjamin Netanyahu [neh-tahn-YAH-hoo] saying that their agreement threatened the existence of Israel after this country agreed to a “framework” about its nuclear program. Name this country led by President Hassan Rouhani [roo-HAH-nee] and Supreme Leader Ali Khamenei [kah-mee-NAY].

Answer: (Islamic Republic of) Iran [Jomhuri-ye Eslami-ye Iran]

9. Some statues created for this queen’s coronation are called the Queen’s Beasts and are now on display in Canada. This person became queen while on vacation in Kenya, though she wasn’t coronated until over a year later. This person became heir presumptive to the throne when her uncle abdicated in order to marry an American divorcée, Wallis Simpson. This daughter of George VI is the longest-reigning British monarch in history. This woman’s oldest son went through a divorce and, after his first wife died, married Camilla Parker Bowles in 2005. Name this modern queen who is the mother of Prince Charles.

Answer: Elizabeth II [prompt on Elizabeth]

10. This musical piece has a theme of seven eighth notes followed by two staccato quarter notes followed by a half note. After playing that theme twice, it goes through several repetitions of 11 eighth notes followed by a half note. This musical piece begins with the musical hymn “O Lord, Save thy People”, and it uses folk songs to overwhelm “La Marseillaise” [lah mar-sel-ayz]. This piece became popular in the United States after the Boston Pops performed it in 1974 on television on July 4th. Its score includes 16 cannon shots. Name this piece by Pyotr Tchaikovsky commemorating the Battle of Borodino in its title year.

Answer: 1812 Overture or The Year 1812

### ***Check the score.***

11. This hormone combined with an ester makes a drug with “un-deca-no-ate” [“un-DECK-uh-NO-ate”] in its name that is being tried as a male contraceptive. The body uses aroma-tase [uh-ROH-mut-“ace”] as a catalyst to turn this hormone into estra-diol [ESS-truh-“DIE”-awl], a reaction that takes place in Sertoli [sur-TOH-lee] cells. The interstitial [in-ter-STI-shul] cell-stimulating hormone, which is equivalent to luteinizing [LOO-tuh-nigh-zeeng] hormone, causes Leydig [“LIE-dig”] cells to produce this hormone. Some athletes monitor the ratio of this hormone to cortisol while training. This hormone increases aggressiveness as well as the production of body hair and muscle. Name this hormone that men have more of than women.

Answer: testosterone

12. This author wrote about Frederick Hallam discovering that our world is being changed by creatures from a parallel universe in *The Gods Themselves*. Another character created by this author tries to reduce the length of impending anarchy by producing a work containing all human knowledge, the *Encyclopedia Galactica*. In the story “Runaround”, this author described objects that could not injure human beings, had to follow the orders of human beings, and must protect their own existence, which are the Three Laws of Robotics. Name this author of *I, Robot* who also wrote the *Foundation* series.  
Answer: Isaac Asimov [or Isaak Yudovich Ozimov]
13. Michel Montaigne [mee-shel mawn-tayn] said that the only way to explain this concept is “because he was he, and I was I”. Baruch [bah-ROOK] Spinoza wrote that this concept is either the combination of joy and an understanding of where that joy comes from, or the knowledge of blessedness. In Plato’s *Symposium*, each person gives a speech about this concept, and the speech by Pausanias [paw-SAY-nee-us] contrasts this concept with desire. Many Greek philosophers identified three forms of this concept: *philia* [FIL-ee-ah], *agape* [ah-GAH-pay], and *eros* [AIR-rohss]. The Book of Leviticus contains the “golden rule”, which says that you should apply this concept to your neighbor as you would want them to do to you. Name this deep affection that can be romantic.  
Answer: love [accept eros before “*philia*”]
14. This general ordered Benjamin Butler to cancel prisoner exchanges until prisoners of different races were treated equally following the Fort Pillow Massacre. This person defeated Gideon Pillow at the Battles of Belmont and Fort Donelson. This leader completed Winfield Scott’s Anaconda Plan when he got John Pemberton to surrender Vicksburg, giving the Union control all along the Mississippi River. He was the final commanding general of the United States Army during the Civil War and accepted General Lee’s surrender at Appomattox Court House. Name this Civil War general who also succeeded Andrew Johnson as president of the U.S.  
Answer: (Hiram) Ulysses S. Grant
15. Transparency was added to this format in version 89a. Hacks involving multiple blocks of different 8-bit color palettes can be used to overcome this format’s normal restriction to 256 colors, a limit that explains why people choose JPEG [“jay-peg”] rather than this format for photos. This lossless format was developed at CompuServe and uses the LZW [“L-Z-W”] compression algorithm, a dispute over which led to the development of PNG [“P-N-G”] to partly replace this format. Name this image format whose pronunciation is the subject of a popular dispute, and which can be animated.  
Answer: GIF [hard or soft ‘g’] [or graphics interchange format]

**Check the score.**

16. In a Tintoretto painting, St. Mark saves one of these people by floating in from the top of the painting and making this type of person invulnerable. In a Jean Ingres [zhahn ahn-gr'] painting, one of these people—who is mentioned second in the painting title—plays a tanbur for a nude odalisque [oh-dah-leesk]. The bodies of several of these people are depicted in the water in an 1840 painting originally subtitled *Typhoon coming on*; that J. M. W. Turner painting is named for depicting a *Ship* that carried these people. Banksy painted a mural protesting the use of these people's labor. Name these people, several of whom were depicted by Gustave Boulanger [boo-lahn-jay] before being sold.

Answer: slaves [accept any reasonable answer referring to enslaved people or slavery or forced laborers]

17. Scholars used to claim that Tammuz was able to go through this process because Ishtar was willing to remove an article of clothing each time she passed through one of seven gates. Soon after Nephthys [NEF-thiss] and Isis help Osiris go through this process, Osiris impregnates Isis with Horus. Eurydice [yur-ID-ih-see] was unable to do this because she was looked at by her husband, Orpheus. According to some versions, Dionysus ["die"-oh-NY-suss] went through this process after Titans ate everything except his heart. The apostle Thomas did not believe that Jesus did this. Name this process that Christians celebrate every Easter because Jesus did it three days after the Crucifixion.

Answer: resurrection or rebirth [prompt on answers like leaving the underworld]

18. This person is credited for writing the poem that appears on the bottom of his engraving *The Bloody Massacre Perpetrated in King Street*. A poem about this person states that he gave "A cry of defiance, and not of fear", and says that this person "said 'Good night!' and with muffled oar silently rowed to the Charlestown shore", though in reality other people rowed for him. That poem about this person begins "Listen, my children, and you shall hear". Name this silversmith who was the subject of a Henry Wadsworth Longfellow poem depicting his "Midnight Ride".

Answer: Paul Revere

19. In many redox reactions, ferroin ["FEAR-oh-in"] is used for this purpose. Scientists debate whether the dye resazurin [ree-SAZ-ur-in] counts as fulfilling this purpose because its change is irreversible. In a different context, nitrazine [NIGH-truh-zeen] is used for this purpose, determining whether membranes have ruptured at the end of a pregnancy. Dyes extracted from lichens [LIE-kuns] are attached to filter paper and used for this purpose. The "universal" mixture for this purpose is made by combining thymol blue, methyl red, phenolphthalein [fee-nawl-THAY-leen], and other chemicals. Give this term for a substance used in titration, which changes color based on properties of a solution.

Answer: indicator(s) [accept redox indicator(s) or pH indicator(s)]

20. Three years after a part of this act was repealed, Roger Taney [TAW-nee] determined that it violated the Constitution because individuals are allowed to take their property into territories. The Tallmadge Amendment, which was part of the House version of this law but could not pass the Senate, would have phased out slavery. The second stage of this act focused on a state constitution and was worked out by Henry Clay. This legislation turned a district of Massachusetts into the state of Maine, and it prohibited slavery north of 36 degrees, 30 minutes north latitude in any future states taken from the Louisiana Purchase. Name this 1820 “compromise”.

Answer: Missouri Compromise [accept just Missouri after the end; accept Compromise of 1820 before “1820”]

***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.***

- <sup>TB</sup>21. In 2015, a major hundred-acre expansion of one of this state’s parks south of Interstate 40 was announced, called Park Center. The Alexandria Innovation Center incubates biotech firms outside this state’s city of Morrisville. IBM’s largest U.S. office is located in this state, as is the largest non-Silicon-Valley hub for Cisco [SIS-koh]. Wake County offers financial incentives for companies located in a special “Park” in this state, whose Research Triangle is formed by two state universities and Duke University. Name this state home to Chapel Hill, Durham, and Raleigh.

Answer: North Carolina

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

- <sup>TB</sup>22. The *Ulysses* probe swung by Jupiter, then measured this object’s polar regions. A spacecraft called the SOHO has provided information about this object’s tacho-cline [TAK-oh-klyne], an interior boundary between its radiative and convective zones. The termination shock marks a slowdown point for a stream of plasma emitted by this object. Galileo noticed temporary dark spots on the surface of this object that are now known to be caused by concentrated magnetic fields. When Mercury or Venus passes between this object and Earth, it is called a transit. Name this massive star one astronomical unit from Earth.

Answer: Sun [or Sol]

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

- <sup>TB</sup>23. This company controls the companies Braeburn Capital and FileMaker. Ronald Wayne helped start this company in 1976, though most of the work was done by Steve Wozniak and Steve Jobs. This company is now headed by Tim Cook. One of its first popular products was the Lisa. In 1984 this company introduced the first version of the Macintosh operating system. Name this company that makes Macbooks, iPads, and iPhones.

Answer: Apple (Inc.) [accept Apple Computer Inc.]

***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.***