

2015 SCOP Middle School 5

Round 7

Alston Boyd • Brad Fischer • Becca Kobernat • Alec Krueger • Sabrina Lato • Mike Laudermitth
Dylan Minarik • Shayaan Naseer • Dr. Noah Prince • Kristin A. Strey • Brittany Trang • Tyler Vaughan
Shreyas Vissapragada • Michael H. Wong • Yinga Xia

Tossups

1. **In this work, Dioneo [dee-oh-nay-oh] is exempt from following the orders of the King or Queen each day. This work includes a story told by Fiammetta [fee-ah-meh-tah], which relates how Federigo seeks the love of Monna by cooking his prized falcon; that story is one of the hundred tales told by (*) ten people from Florence who tell stories for ten days while escaping the plague in, for 10 points, this collection of stories by Boccaccio [boh-kah-chee-oh].**

Answer: The Decameron (accept Il Decamerone)

2. **This figure's blood created the corals of the Red Sea and the Saharan vipers after she was punished for defiling Athena's temple. Her sisters, Stheno and Euryale, were immortal, but this woman was not. After her death, Chrysaor and (*) Pegasus were born from her body. With the help of Athena's mirrored shield, Perseus beheaded this mythical monster. For 10 points, identify this snake-haired Gorgon who turned anyone who looked at her into stone.**

Answer: Medusa

3. **This event took place on King Street and was ended by Thomas Hutchinson's clearing of the crowd. An inaccurate engraving depicts the perpetrators of this event standing in an organized line; that engraving by (*) Paul Revere also depicts the first victim of this event as a white man. Crispus Attucks was one of five people killed by British soldiers in, for 10 points, what March 5, 1770 incident in Massachusetts?**

Answer: Boston Massacre

4. **The clergy in this religion include Seventies and the Order of the Twelve, and are divided into Melchizedek [mehl-KIH-zah-deck] and Aaronic [ay-ron-ick] Priesthoods. Urim [oo-rim] and Thummim [thoo-mihm] were used in the translation of holy texts in this religion. The angel (*) Moroni revealed this religion's holy book, written on golden plates, to this denomination's founder, Joseph Smith. For 10 points, name this Christian denomination headquartered in Salt Lake City, Utah.**

Answer: Church of Jesus Christ of Latter Day Saints (accept Mormonism; prompt on LDS)

5. **This city is home to the City Lights Bookstore and a music festival on its Treasure Island. Its Telegraph Hill is just south of Fisherman's Wharf. Its Haight-Ashbury district was a center of hippie culture in the (*) 1960's, and its bay was once home to a federal prison on Alcatraz Island. For 10 points, name this California city across the bay from Oakland, the home of cable cars and the Golden Gate Bridge.**

Answer: San Francisco

6. **A Lucas cell can be used to detect one element in this group that causes lung cancer. Ununoctium is the newest member of this group. Shorthand electron configurations features abbreviations for elements in this group in brackets. Each one of these elements is (*) monatomic with a full valence shell. For 10 points, name this group of unreactive elements on the far right of the periodic table, whose members include xenon, radon, and helium.**

Answer: noble gases (accept Group 18 of the Periodic Table before mentioned)

7. **This work's creator had earlier painted the title phenomenon *Over the Rhone*. Blue hills rise in the background of this painting, which was created in an asylum outside the French village of Saint Rémy [sahn reh-MEE]. A (*) cypress tree dominates this painting's foreground, in front of a village illuminated by a swirling crescent moon. For 10 points, name this depiction of an evening sky created by Vincent van Gogh.**

Answer: The Starry Night (accept De sterrennacht [deh SHTEH-reh-nahkt])

8. **Ancient examples of these structures include one named for the god Izanagi and another named Farallon which gave rise to a modern one called Juan de Fuca. If these structures meet at a convergent boundary, (*) subduction can occur, and they grow at mid-ocean ridges in the process of seafloor spreading, which causes continental drift. The lithosphere consists of, for 10 points, what moving sections of Earth's crust?**

Answer: tectonic plates (prompt on "plates")

9. **In a work by this author, Pontiac dealer Dwayne Hoover is obsessed with a science fiction author. One of his novels takes place in San Lorenzo, the home of Bokononism. A ballerina is shot by Diana (*) Moon Glampers in a short story by this author of *Breakfast of Champions* and *Cat's Cradle*, who created the fictional writer Kilgore Trout. For 10 points, name this American author of the short story "Harrison Bergeron," who created Billy Pilgrim for his novel *Slaughterhouse-Five*.**

Answer: Kurt Vonnegut, Jr.

10. **This nation's Order #270 required the killing of deserting soldiers and the arrest of their families. This nation's secret police, led by Lavrentiy Beria, committed and covered up the Katyn massacre of Polish citizens. This country was the target of (*) Operation Barbarossa, which saw German forces siege cities like Smolensk and Leningrad. For 10 points, name this country led during World War II by Joseph Stalin.**

Answer The Soviet Union (accept USSR, Union of Soviet Socialist Republics, or CCCP; do not accept Russia)

11. The formula for Euclidean distance between two points is derived from this theorem. James Garfield drew a trapezoid to begin his proof of this theorem. Sets of positive integers that satisfy this formula are known as namesake (*) "triples," including 3, 4, and 5. For 10 points, name this geometric theorem, named for an ancient Greek mathematician, that compares the sides of a right triangle, often written as a squared plus b squared equals c squared.

Answer: Pythagorean theorem (prompt on "a squared plus b squared equals c squared" before mentioned)

12. In one work, this anti-mercantilist philosopher noted that it wasn't benevolence, but self-interest, that made "the butcher, the brewer, or the baker" offer their services. That work by this author notes the power of division of labor and explained how (*) markets regulate themselves with the "Invisible Hand" metaphor. For 10 points, name this Scottish economist, the author of *The Theory of Moral Sentiments* and *The Wealth of Nations*.

Answer: Adam Smith

13. This author wrote about Dr. Edwin Ransom's encounters with life on Mars and Venus in *Out of the Silent Planet* and *Perelandra*. This author of *The Screwtape Letters* wrote about Digory and Polly, who pave the way for the (*) Pevensie children, and about Prince Caspian and the lion Aslan. For 10 points, identify this author of *The Chronicles of Narnia*, including *The Lion, the Witch, and the Wardrobe*.

Answer: C(live) S(taples) Lewis (prompt on "Lewis" alone)

14. In *Thaumcraft 4*, totems of this material create an "eerie" biome. Creating an enchantment table requires four of these blocks, while an Ender chest requires an Eye of Ender in a square of eight of these blocks. This material, formed when flowing (*) water meets a lava source block, can be used to construct a Nether Portal but requires a Diamond Pickaxe to mine in Minecraft. For 10 points, name this rock, which forms from rapidly cooling lava into a black, shiny volcanic glass.

Answer: obsidian (prompt on "volcanic glass" before mentioned)

15. The case *Furman v. Georgia* dealt with inequitable use of this practice, and *Atkins v. Virginia* ruled that mentally handicapped people cannot undergo this procedure. In 2011, Hospira stopped producing sodium thiopental, the first of a (*) three-drug process often used in this procedure. For 10 points, name this form of punishment usually performed in the United States by lethal injection on inmates serving on "Death Row."

Answer: capital punishment (or the death penalty, execution, or equivalents; prompt on lethal injection before mentioned)

16. Vasopressin inserts aquaporins into sections of this organ to regulate blood pressure. A concentration gradient is created by reabsorbing ions through this organ's Loop of Henle. The Bowman's capsule encloses this organ's filtering portion, the glomerulus, at the beginning of its (*) functional unit, called a nephron. Dialysis is used after this organ fails. For 10 points, name this bean-shaped organ that filters blood and concentrates urine.

Answer: kidney

17. Until 2006, these people were equipped with triple-barreled guns for defense against wolves. Three of these people died after leaving Salyut 1 when their capsule decompressed; another died in a training flight seven years after he flew on (*) Vostok 1. The station Mir was run by three of these people. Valentina Tereshkova and Yuri Gagarin were, for 10 points, what type of explorer who flies on Soyuz rockets for the USSR or, now, Russia?

Answer: cosmonauts (accept Russian/Soviet astronauts before mentioned; prompt on astronaut alone)

18. One character in this work is called *salao*, but fondly remembers his first fishing trip with a five-year-old helper. That protagonist dreams of lions on a beach, and he remains confident in the Yankees and the “great DiMaggio.” (*) Manolin is forbidden to go with the title character in this novella, who goes for 84 days without a fish before finally catching a marlin, only to have it get eaten by sharks. For 10 points, identify this novella about Santiago, a work by Ernest Hemingway.

Answer: The Old Man and the Sea

19. Calculations in this theory can be simplified in a manifold named for Minkowski. This theory includes the “pole in the barn” and “twin” paradoxes, and it predicts length contraction and time dilation. This theory assumes the (*) speed of light to be constant in all reference frames; that fact can be used to derive $E = mc^2$. For 10 points, name this theory, proposed by Einstein before its “general” counterpart.

Answer: special relativity (prompt on “relativity,” do not accept “general relativity”)

20. Mily Balakirev convinced this composer to re-work the “love theme” of one of his Shakespearean tone poems, an “Overture-Fantasy” on *Romeo and Juliet*. He used *La Marseillaise* to represent Napoleon's army as its invasion of (*) Russia failed under cannonfire, represented by bass drum or an actual cannon. For 10 points, name this Romantic Russian composer of six symphonies, including the *Pathétique Symphony*, and the *1812 Overture*.

Answer: Peter Ilyich Tchaikovsky (or Pyotr Ilyich Tchaikovsky)

Bonuses

1. Operation Paul Bunyan used helicopters, bombers, and an offshore aircraft carrier to support the removal of a tree from this region near Panmunjom. For 10 points each,

[10] Name this no-man's-land along the 38th parallel. It was created in a July 1953 armistice.

Answer: **Demilitarized Zone** (or **DMZ**) (accept, but do not otherwise reveal, any additional information that describes the DMZ as being between North and South Korea)

[10] The DMZ was created at the end of this war. At various points in this war, the capitals of Seoul and Pyongyang were each captured by enemy forces.

Answer: **Korean** War

[10] This American general led an offensive into North Korea to the Yalu River that triggered Chinese involvement in the war. President Truman removed him from command for insubordination in 1951.

Answer: Douglas **MacArthur**

2. The gravitational form of this quantity is equal to mass times little G times height. For 10 points each,

[10] Name this type of energy, symbolized U, that results from object's position in a force field. A roller coaster at the top of a hill converts this energy into kinetic energy when it goes down.

Answer: **potential** energy

[10] The negative change in potential energy is equal to this quantity. This quantity also equals force times distance.

Answer: **work**

[10] The potential energy stored in this object is one-half times the namesake constant times displacement squared. When a mass is attached to one of these objects, it can undergo simple harmonic motion.

Answer: **spring** (accept answers involving **elastic** material)

3. This league's commissioner, Roger Goodell, was criticized for his peculiar sense of arithmetic in 2014. For 10 points each,

[10] Name this major American sports league, whose players were locked out in 2011 and whose referees were locked out in 2012.

Answer: **National Football League**

[10] In 2014, Goodell initially announced that this Baltimore Ravens running back was suspended two games after allegedly knocking his fiancée unconscious in an Atlantic City hotel

Answer: Ray **Rice**

[10] The original two-game punishment Rice received for domestic abuse was criticized for being eight times lighter than the full season suspension that this Cleveland Browns wide receiver originally received for a repeat violation of the NFL's restriction on marijuana use.

Answer: Josh **Gordon**

4. In one of this woman's novels, the schoolteacher from Sweet Home comes to retrieve a slave woman and her children. For 10 points each,

[10] Name this author of *Song of Solomon* who was the last American to win the Nobel Prize in Literature. She wrote about the escaped slave Sethe in *Beloved*.

Answer: Toni **Morrison** (or Chloe **Wofford**)

[10] In this Harriet Beecher Stowe novel, the title character is almost set free by Augustine St. Clare before he falls into the hands of Sambo and Quimbo on Simon Legree's plantation.

Answer: **Uncle Tom's Cabin**

[10] Jim escapes from the Widow Douglas and Miss Watson and sails on a raft with the mischievous title character in this Mark Twain novel.

Answer: The Adventures of **Huckleberry Finn**

5. At the end of the last ice age, many giant examples of this animal group like the woolly mammoth, ground sloth, and saber-toothed tiger went extinct. For 10 points each,

[10] Name this class of animals characterized by three middle ear bones, hair, and milk production by namesake glands. Rodents are the largest group within this class.

Answer: **Mammalia**

[10] The order Chiroptera, the bats, is the most widespread mammal group after rodents, probably because they are the only mammals that can truly perform this self-powered type of movement.

Answer: **flying** (also accept **flight**)

[10] Perissodactyla mammals, like horses and rhinos, and Artiodactyla, like sheep and pigs, are distinguished by having an odd or even number of these body parts.

Answer: **toes**

6. This ruler defeated King Guthrum at Edington and signed the Treaty of Wedmore. For 10 points each,

[10] Name this king of Wessex who defended his country from invading forces at the Battle of Ashdown. He is the only English king to be known as "the Great."

Answer: **Alfred** the Great

[10] Alfred defeated a group of these marauding, seafaring Scandinavians at Ashdown.

Answer: **Vikings** (accept **Danes**)

[10] The aforementioned battles were chronicled by Bishop Asser's biography of Alfred the Great; an edited edition of that biography inserted an uncited claim that Alfred founded this oldest English university.

Answer: University of **Oxford**

7. Identify the following British women writers for 10 points each.

[10] This author wrote “How do I love thee? Let me count the ways” in her collection *Sonnets from the Portuguese*. She was married to the author of “My Last Duchess,” Robert.

Answer: Elizabeth Barrett **Browning**

[10] This author wrote about Elizabeth Browning’s dog in *Flush*, but is better known for writing *Mrs. Dalloway* and *A Room of One’s Own*.

Answer: (Adeline) Virginia **Woolf**

[10] Virginia Woolf is perhaps best known for a novel in which the Ramsay family plans for a sailing trip to the title building. This type of building is often used in poetry as a metaphor for a beacon for those lost, not always at sea.

Answer: **lighthouse** (accept **To the Lighthouse**)

8. Answer some questions about the mythology of a particular island nation, for 10 points each.

[10] Saint Patrick legendarily drove the snakes out of this island, which serves as the setting of the book of legends known as the *Ulster Cycle*.

Answer: **Ireland** (accept **Éire**; accept **Airlann**)

[10] In another Irish cycle, the Salmon of Knowledge is cooked by this fair-haired hunter, who accidentally attains enlightenment when the fish’s oil dripped onto his thumb.

Answer: **Fionn mac Cumhaill** [“Finn McCool”] (accept **Deimne**)

[10] Fionn mac Cumhaill married Sadhbh [“Saba”], who had been transformed into this animal. In Greek myth, these animals are sacred to Artemis.

Answer: **doe** (or **deer**)

9. Douglas Adams compared this Johann Sebastian Bach musical suite's beauty to that of fractals, noting that these are "what he wrote when he was happy." For 10 points each,

[10] Name this collection of six orchestral works that Bach wrote for Christian Ludwig, who was Margrave of the principality for which these works are named.

Answer: **Brandenburg** concertos (or **BWV 1049-1056**)

[10] It is believed that Bach himself played this instrument at the premiere of the fifth *Brandenburg Concerto*, which features a lengthy, challenging cadenza for it. This keyboard instrument plucks the internal strings, rather than striking them as a piano does.

Answer: **harpsichord** (prompt on clavier; do not accept clavichord or piano)

[10] The first and third movements of *Brandenburg No. 5* are both marked for this tempo, a fast, lively speed of roughly 120 beats per minute, slower than vivace.

Answer: **allegro**

10. For 10 points each, give the following about containment, the official US policy for stopping the spread of communism.

[10] Containment of communism was necessary according to this theory, which held that if one nation fell to communism, its neighbors would be the next countries to fall.

Answer: **domino** theory (or **domino** effect or other equivalents)

[10] This President issued a doctrine threatening US intervention in nations where communism looked like it might take hold. His policy provided money to Greece and Turkey and sent troops to Korea in 1950.

Answer: Harry **Truman**

[10] This President, who served between Ford and Reagan, tried to shift from containment to a more pacifist foreign policy until the Soviets invaded Afghanistan in 1979. He won a Nobel Peace Prize in 2002, in part for his work with Habitat for Humanity.

Answer: Jimmy **Carter**

11. In one scene of this novel, Lucas de Beaumanoir [boh-man-WAHR] accuses Rebecca of witchcraft. For 10 points each,

[10] Identify this novel by Sir Walter Scott, which sees Cedric of Rotherwood banish the title knight when he falls in love with Rowena.

Answer: **Ivanhoe**

[10] Ivanhoe disguises himself and goes by the name “Desdichado” to compete in a tournament that ends with impressive archery by Locksley and opens with one of these contests of horsebacked combat, which Ivanhoe wins.

Answer: **jousting**

[10] In *Ivanhoe*, Locksley is revealed to be this legendary Englishman who, accompanied by Friar Tuck and Little John, robs from the rich to feed the poor.

Answer: **Robin Hood**

12. Adding one of these may increase reaction rate, but it won’t change the equilibrium or equilibrium constant, as it increases the reverse reaction rate just as much as the forward rate. For 10 points each,

[10] Name this type of chemical compound, which speeds up the process of a reaction without being consumed.

Answer: **catalyst**

[10] This principle of equilibrium chemistry states that when a reaction experiences a change in pressure, temperature, concentration, or volume, it will shift to counteract that change.

Answer: **Le Chatelier**’s [luh sha-tell-YAY’s] principle

[10] This metal element with symbol Pt is used in catalytic converters in cars as a pollution reducer.

Answer: **platinum**

13. Identify the following about East Asian literature, for 10 points each.

[10] The Japanese poet Basho was the master of this kind of poem. The Seashell Game included sixty examples of this seventeen-syllable, three-line type of Japanese poem.

Answer: haiku

[10] This Tang-dynasty Chinese poet of "The River Merchant's Wife," was named an "Immortal of the Wine Cup" by his contemporary poet and friend, Du Fu.

Answer: Li Bai (accept Li Po or Li Bo)

[10] According to legend, Li Bai drowned when he leaned from his boat to meet the reflection of this celestial object. One of Li Bai's most famous poems describes drinking alone by the light of this object.

Answer: the Moon

14. James Whistler depicted this kind of woman in his painting *Arrangement in Grey and Black No.1*. For 10 points each,

[10] Name this member of a family, a woman who has children. One of these women washes a little girl's foot in a painting titled *The Child's Bath*.

Answer: mother

[10] This American Impressionist painted many mothers and children in works like *Maternité*, *The Boating Party*, and *The Child's Bath*.

Answer: Mary Stevenson Cassatt

[10] An iconic photo depicting farm worker Florence Owens Thompson with two of her children, titled *Migrant Mother*, was taken by Dorothea Lange to capture the agricultural suffering of this Great Depression-era event.

Answer: Dust Bowl

15. This statistical quantity can be calculated by taking the average of the squared elements of a data set, minus the square of the average of the data set. For 10 points each,

[10] Name this measure of how spread out a data set is, measured in the square of the unit of the original set. For that reason, the standard deviation, which is the square root of this quantity, is more commonly used in analysis.

Answer: (population or sample) variance

[10] This other measure of spread is less informative than variance or standard deviation, but it is far easier to calculate; simply take the largest value in the set, minus the smallest value in the set.

Answer: range

[10] The range may be an inaccurate measure of how spread out a data set is if the set includes a point that is very large or very small compared to the rest of the set; this term describes such a point.

Answer: outlier

16. The diverting of water from the Amu Darya and Syr Darya for irrigation caused this large body of water to start shrinking rapidly in the 1960s. For 10 points each,

[10] Name this body of water, once one of the largest lakes in the world, found between Kazakhstan and Uzbekistan.

Answer: **Aral** Sea

[10] The Karakum Canal diverted the Amu Darya to irrigate this crop; as a result, Uzbekistan is the world's sixth largest producer of this textile crop, which is also prominently grown in Egypt.

Answer: **cotton**

[10] Uzbekistan is east of, but does not have a shore on, this body of water, which was once fed by the Amu Darya. This largest lake in the world is, confusingly, called a sea.

Answer: **Caspian** Sea

17. Leaders of this movement founded Oberlin College in Ohio; in 1858, a mob of Oberlin residents sieged a hotel to rescue John Price, a runaway slave who had been arrested under the Fugitive Slave Act. For 10 points each,

[10] Name this movement to end the American practice of slavery, advocated by the newspaper *The Liberator* and by speakers like former slave Sojourner Truth.

Answer: **abolitionism** (accept word forms)

[10] This man founded and published *The Liberator* for 36 years.

Answer: William Lloyd **Garrison**

[10] In 1854, Garrison publicly burned a copy of this document, calling it a "Covenant with Death." The final issue of *The Liberator* celebrated the end of slavery because this document had been amended to ban slavery.

Answer: U.S. **Constitution**

18. The Superconducting Super Collider was to be the world's largest particle accelerator, but it was canceled over cost concerns in 1993. For 10 points each.

[10] The SSC was to be built near Waxahachie in this U.S. state. It's also home to the Johnson Space Center, which serves as Mission Control for American spaceflight.

Answer: **Texas**

[10] Congress debated whether the government could afford both the SSC and this other joint project between NASA and the space agencies of Russia, Japan, Canada, and Europe. Chris Hadfield served as its commander in 2013.

Answer: **International Space Station**

[10] The SSC would have had five times the collision energy of the Large Hadron Collider, built near Geneva by this European organization.

Answer: **CERN** (or the **European Organization for Nuclear Research**)

19. In Christian lore, God acts directly to influence the lives of many biblical figures. For 10 points each, [10] Give this name for divine acts, often used to restore faith or reward the faithful. Jesus performed several of these acts, including turning water into wine and bringing Lazarus back to life.

Answer: **miracles**

[10] This Jewish prophet interpreted writing on the wall during Belshazzar's feast. He was later thrown into the lion's den, but escaped unharmed.

Answer: **Daniel**

[10] Another Old Testament miracle is this one, which God performed so that Joshua could continue fighting for more than a day to defend Gibeon [note: not Gideon].

Answer: the **sun** and moon **standing still** in the sky (accept any reasonable description of this phenomenon, such as "the **sun** not moving" or "the **sun** staying up for two days")

20. This economic concept can be illustrated by spending a Saturday playing quizbowl, as that's one fewer day you could spend doing homework, working a part-time job, or relaxing with friends. For 10 points each,

[10] Give this two word term that describes the value lost in a trade-off by choosing to spend resources on a different option.

Answer: **opportunity cost**

[10] Opportunity cost is often described in economics by the food-related catchphrase that "there is no such thing as" one of these.

Answer: a **free lunch**

[10] Someone who does receive a lunch at no cost is said to be a "free rider," benefiting from someone else's paying of the cost of the lunch. This "tragedy" is a scenario where free lunches, or other public goods, are exploited by individuals who don't replenish whatever resource is providing them.

Answer: tragedy of the **commons**