# 2015 SCOP Middle School 5
# Round 2

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Tossups

1. **John Keats wrote a poem about George Chapman's translation of this author, who wrote about unfortunate characters who eat Helios's cattle in one of his works. This author wrote about the "Wrath of Achilles" and about (\*)** Penelope, the mother of Telemachus, who undoes her weaving every night as she waits for her husband to return to Ithaca after the Trojan War. For 10 points, identify this author of *The Iliad* and *The Odyssey.*
Answer: **Homer**os

2. **This ruler was supported and succeeded by the vizier Ay. This successor of Smenkhare reverted many of the religious reforms made by his father, including the worship of Aten. After dying, possibly in a chariot accident, he was buried in (\*)** KV62, a tomb discovered in 1922 by a team led by Lord Carnavon and Howard Carter. For 10 points, name this son of Akhenaten, a boy Pharaoh of Egypt.
Answer: **Tutankhamun** (accept "King **Tut**")

3. **One form of this action, Fajr [fah-jur], consists of 2 raka'at [ray-kah-aht] before sunrise. The adhan is a call by the muezzin for people to perform this action, which is preceded by wudu, a ritual washing. This action, led in congregation by the (\*)** imam, is the second pillar of Islam. For 10 points, name this religious practice, called salat in Arabic, that is performed five times each day while facing Mecca.
Answer: (Islamic) **prayer** (accept **salat** before mention)

4. **One king of this name was arrested in Varennes [vah-REN] while fleeing from a revolt. An earlier king of this name was a child when the nobles rose against him in the Fronde uprising. The House of Capet included five kings of this name. The last king of this name took power in the 1814 (\*)** Bourbon Restoration, and the longest serving king of this name was nicknamed "the Sun King." For 10 points, give this name shared by eighteen royal leaders of France.
Answer: **Louis**

5. **This number is squared in the solution to the Basel problem. One experiment to calculate this number exploits the Buffon's needle problem. Archimedes (\*)** approximated this number, the number of radians in 180 degrees, by bounding it by the perimeters of 96-sided polygons, finding that it is less than 22 over 7. For 10 points, give this ratio of a circle's circumference and diameter, an irrational number approximately equal to 3.14.
Answer: **pi**

6. **Clara sings that "Fish are jumpin' and the cotton is high" in this composer's song "Summertime." He included bongos and maracas in his *Cuban Overture*, and he wrote songs like "Embraceable You" with his brother (\*)** Ira. He improvised the piano part at the 1924 premiere of his most famous work, a fusion of classical music and jazz. For 10 points, name this American composer of *Porgy and Bess* and *Rhapsody in Blue*.
Answer: George **Gershwin**

7. **In this work, David Gamut tries to teach beavers to sing psalms, and Heyward pretends to be a medicine man so he can rescue Alice. Cora Munro is captured by Magua, who kills Uncas during a failed rescue attempt by (\*)** Chingachgook and Natty Bumppo, who is also known as Hawkeye. For 10 points, identify this second novel in *The Leatherstocking Tales*, a work by James Fenimore Cooper about the final member of a Native American tribe.
Answer: The **Last of the Mohicans**

8. **The instinctive palmar grasp reflex is this type of behavior in human babies, and Robert Wiedersheim mistakenly included the pineal gland in his list of 86 of these structures. The muscles that cause goosebumps may be this type of organ, as are (\*)** kiwi's wings and the pelvic bones of whales. The human tailbone and appendix are examples of, for 10 points, what type of structure that served a role in an ancestor species but do not have a present function?
Answer: **vestigial** structures (accept "organs" or "behaviors" in place of "structures")

9. **Philae was the center of this goddess's cult. This goddess made a snake out of earth to bite Ra, which forced Ra to give up his true name. This goddess searched for a tamarisk tree to find her dead husband after he was tricked by (\*)** Set; she later reassembled thirteen pieces of that husband to make him the god of the dead. For 10 points, name this Egyptian goddess, the mother of Horus and wife of Osiris.
Answer: **Isis** (accept **Aset**, **Eset**, or **Ese**)

10. **The Dulong-Petit law approximates the heat capacity of materials in this phase. Silicon dioxide can be an example of the "amorphous" type of this phase, during which (\*)** sublimation can occur. The phase diagram of water has a negative slope between this phase and the liquid phase. For 10 points, name this phase of matter, exemplified by materials such as glass.
Answer: **solid** (accept **crystal**s before "amorphous")

11. **In this battle, Joshua Chamberlain ordered a bayonet charge to defend a hill. Richard Ewell assaulted, but failed to take, Culp's Hill on each of the three days of this battle. Cemetery Ridge was the site of** (*) Pickett's Charge, a failed assault in this battle that represented the high water mark of the Confederate invasion. For 10 points, name this July 1863 battle, the turning point of the Civil War, after which Abraham Lincoln gave a famous address.
Answer: Battle of **Gettysburg**

12. **A character in this work refuses a marriage proposal from St. John [sin-jin], and doubts Alice Fairfax, who blames strange sounds on Grace Poole. Mr. Bocklehurst causes the death of** (*) Helen Burns, whom the protagonist meets at Lowood School in this novel. Bertha Mason was the first wife of Edward Rochester, who eventually marries the protagonist of, for 10 points, this novel by Charlotte Brontë.
Answer: **Jane Eyre**

13. **In this painting, a man plays a trumpet behind two soldiers who are walking away from the viewer. A little girl in white looks directly at the viewer, and a woman in the foreground of this large painting walks a** (*) monkey on a leash. Painted with uniformly-sized dots of color, rather than brushstrokes is, for 10 points, what pointillist painting by Georges Seurat [zhorzh soo-RAH], named for a title time *On the Island of La Grande Jatte* [lah grahnd jaht]?
Answer: A **Sunday Afternoon** on the Island of la Grande Jatte (accept Un **dimanche après-midi** à l'Île de la Grande Jatte)

14. **The pair-instability type of this event was observed for the first time in 2006. Cas A and the Crab Nebula are remnants of these energetic events that can occur when a white dwarf exceeds the** (*) Chandrasekhar limit. During these events, heavy elements can be synthesized when the core of the parent star collapses. For 10 points, name these events, classified as Types 1 and 2, during which stars explode very violently.
Answer: **supernova**s (do not prompt on or accept "nova")

15. **This novel's protagonist follows a mysterious noise to a doorway hidden by a tapestry. The first friend that character makes is a robin who she learns is also the companion of Ben Weatherstaff. An orphaned girl goes to live with her uncle at** (*) Misselthwaite Manor where she learns to enjoy playing outside after being given a jump rope by the mother of Dickon. Frances Burnett wrote, for ten points, what novel, in which Mary Lennox discovers the title location?
Answer: The **Secret Garden**

16. **The *Final Fantasy* game of this number introduced the gunblade-wielding Squall. In *Hearthstone*, Ragnaros' fireball effect deals this much damage. Ignoring "Minus World," there are this many worlds in the original *Super Mario Bros.* game. The** (*) "Luigi Death Stare" appears in the *Mario Kart* game of this number, released in 2014. For 10 points, give this Pokedex number of Wartortle and maximum number of lines cleared by two Tetris "I" blocks.
Answer: **8** (accept *Final Fantasy VIII* or **Mario Kart 8**)

17. **This speech notes that America has given a "bad check," but its speaker refuses to believe that "the bank of justice is bankrupt." This speech hopes that the "table of brotherhood" will join together the sons of slaves and slave owners and that the speaker's (\*)** "four little children" will be judged "by the content of their character." For 10 points, name this speech, given at the March on Washington on August 28, 1963 by Dr. Martin Luther King.
Answer: **I Have A Dream**

18. **Avulsion is causing the Atchafalaya River to gain volume from this river. One bend in this river forms an exclave of Fulton County, Kentucky, and it was said to flow backward during the New Madrid [MAA-drid] earthquake. Its headwaters are at (\*)** Lake Itasca, and it is joined at Cairo [kay-roh], Illinois by the Ohio River. New Orleans lies near the end of the 2,300 mile long journey of, for 10 points, what longest river in the United States?
Answer: **Mississippi** River

19. **The Spitzer telescope operates in this range of the light spectrum. This region of light is used in spectroscopy to measure vibrating bonds. William Herschel discovered this non-visible type of light from the sun by measuring its (\*)** heating ability. For 10 points, name this region of electromagnetic radiation used in night vision goggles and thermal imaging that, unlike ultraviolet light, has longer wavelengths than visible light.
Answer: **infrared** light (accept **infrared** radiation)

20. **In a pair of works by this author, Timaeus describes the origin of the universe and Critias details the history of Atlantis. He wrote of Kallipolis, an ideal city-state where philosopher-kings rule, in a work that seeks to define justice for individuals and the (\*)** city-state. For 10 points, name this Ancient Greek philosopher, a teacher of Aristotle and author of dialogues, like The Republic, which feature his teacher, Socrates.
Answer: **Plato**

Bonuses

1. This man promoted Usonian architecture, and was a strong proponent of the Prairie School style. For 10 points each,
[10] Name this American architect, who created the Tokyo Imperial Hotel and Robie House.
Answer: Frank Lloyd **Wright** (accept Frank Lincoln **Wright**)
[10] Wright cantilevered portions of this Prairie School house over a river in Pennsylvania for Edgar Kaufmann's family.
Answer: **Fallingwater**
[10] Wright planned many of his designs from this Wisconsin studio named for a Welsh bard. He later designed a "West" studio with this name in Arizona.
Answer: **Taliesin** East (accept **Taliesin** I)

2. This Royal Navy Commander first appeared in the novel *Casino Royale*. For 10 points each,
[10] Name this British secret agent, also known as 007 ["double-oh-seven"], who appears in many Ian Fleming works.
Answer: James **Bond** (absolutely accept "**Bond**, James Bond")
[10] Ian Fleming based James Bond on the experiences of a member of this British counter-intelligence agency that is often contrasted with the Secret Intelligence Service, or Section 6.
Answer: **M**ilitary **I**ntelligence, Section **5** (accept **Security Service**)
[10] In this author's novel *The Secret Adversary*, the detectives Tommy and Tuppence work with British intelligence agent Mr. Carter. This author also created the detectives Hercule Poirot [ayr-KYOOL pwah-ROH] and Miss Marple.
Answer: Dame Agatha Mary Clarissa **Christie**

3. A July 2014 report on *FiveThirtyEight.com* found that the Pythagorean expected record of Red Klotz' Washington Generals was equal to their actual record: roughly 6 wins and 14,000 losses. For 10 points each,
[10] First, the Washington Generals are the traditional opponent of this barnstorming comedic basketball team. On Futurama, this team's players double as math geniuses.
Answer: Harlem **Globetrotters** (prompt on "Harlem")
[10] This statistician analyzed the Harlem Globetrotters for his website, *FiveThirtyEight.com*, which also published his completely correct prediction of the 2012 electoral college results.
Answer: Nathaniel Read "Nate" **Silver**
[10] In 2014, *FiveThirtyEight.com* transitioned from *The New York Times* to this sports website, which also publishes *Grantland.com*. As a TV channel, it produces the *30 for 30* documentary film series and *Sportscenter*.
Answer: **ESPN**.com

4. Examples of these mathematical entities include x to the first power and *x* to the second power, but not *x* to the three-halves power. For 10 points each,

[10] Name this type of expression that involves only addition and multiplication of real numbers and variables with positive integer exponents.

Answer: **polynomial** (accept **monomial**)

[10] Information about the roots of a polynomial can be found quickly by finding this quantity. For the quadratic polynomial *a x* squared plus *b x* plus *c*, this quantity is equal to *b* squared minus 4 *a c*.

Answer: **discriminant**

[10] If the discriminant of a quadratic polynomial is zero, then the graph of the polynomial will feature exactly one of these points, where the graph touches the x-axis.

Answer: (x-)**intercept**

5. For 10 points each, give the following about surprise attacks in Japanese history.

[10] Admiral Yamamoto Isoroku planned the bombing of this Hawaiian naval base on December 7th, 1941 that sparked US involvement in World War II.

Answer: **Pearl Harbor**

[10] In 1904, Japan's navy attacked this country's fleet at Port Arthur, three hours before officially declaring war against it. The ensuing war between this country and Japan ended with the Treaty of Portsmouth, which was brokered by Teddy Roosevelt.

Answer: **Russia** (accept **Russian Empire**; do not accept "USSR" or "Soviet Union")

[10] In the 1560 Battle of Okehazama, this daimyo's forces sneaked to the rear of the opposing army, killing the opposing leader at his tent. This unifier of Japan was succeeded by Toyotomi Hideyoshi and Tokugawa Ieyasu.

Answer: **Oda** Nobunaga

6. Dimmesdale is revealed to be Pearl's father in this novel. For 10 points each,

[10] Name this novel, in which Hester Prynne is forced to wear the sew a capital "A" to her clothing as a sign of her adultery.

Answer: The **Scarlet Letter**

[10] Name this American author of *The Scarlet Letter*, who also wrote *The House of the Seven Gables* and the short stories "Dr. Heidegger's Experiment" and "The Minister's Black Veil."

Answer: Nathaniel **Hawthorne** (accept Nathaniel **Hathorne**)

[10] "Dr. Heidegger's Experiment" and "The Minister's Black Veil" are stories from this Hawthorne short story collection, which was famously reviewed by Edgar Allan Poe.

Answer: **Twice-Told Tales**

7. Landscapes consisting of this rock are known as karsts and often feature cracks and holes where acidic water dissolves it. For 10 points each,

[10] Name this calcium carbonate rock, a common sedimentary rock used as building material in the Great Pyramids.

Answer: **limestone**

[10] Speleologists study these underground structures, the result of extensive dissolution of limestone or similar rocks. These hollow spaces may feature stalagmites and stalactites.

Answer: **cave**s (accept **cavern**s)

[10] Most dissolution of limestone karsts results from the behavior of this weak acid, formed from a solution of carbon dioxide and water.

Answer: **Carbonic** acid (accept $H_2CO_3$)


8. This is the second longest river in its nation, after the Severn. For 10 points each,

[10] Name this river, which passes through Oxford on its route to the North Sea. It has been the site of Olympic rowing competitions twice, though Dorney Lake was used instead in 2012.

Answer: **Thames** River

[10] The Thames River flows through this capital of the United Kingdom.

Answer: **London**, England

[10] Sometimes called the Millennium Wheel, this large Ferris Wheel on the south bank of the Thames opened in 2000.

Answer: London **Eye**


9. Some conspiracy theorists claim that a gunman involved in this event stood on a grassy knoll, either in addition to or instead of a gunman in the Texas School Book Depository. For 10 points each,

[10] Name this November 22nd, 1963 event in which Texas governor John Connolly was wounded.

Answer: **assassination** of **J**ohn F. **Kennedy** (accept equivalents for "assassination;" accept "JFK" for "Kennedy;" prompt on "assassination of Kennedy" alone)

[10] The Warren Commission concluded that this man was the lone gunman responsible for Kennedy's death. After fleeing from the Book Depository, he killed police officer J.D. Tippit before being captured in a movie theater.

Answer: Lee Harvey **Oswald**

[10] While being transported out of police headquarters, Oswald was fatally shot by this nightclub owner.

Answer: Jack Leon **Ruby** (accept Jack Leon **Rubenstein**)

10. This man had ten sons with Leah, Bilhah, and Zilpah. For 10 points each,

[10] Name this biblical figure, later named Israel, who was the father of Benjamin with his favorite wife, Rachel.

Answer: **Jacob**

[10] This son of Jacob was the older brother of Benjamin. His beautiful coat made his brothers jealous enough to sell him into slavery in Egypt.

Answer: **Joseph** (accept **Yosef**)

[10] To earn the right to marry Rachel, Jacob worked for this resident of Paddan Aram [pah-dahn ah-rahm] for fourteen years. This man was Rachel's father, and was the brother of Jacob's mother, Rebecca.

Answer: **Laban** [lay-behn]


11. Kent Brantly, Nancy Writebol, and Rick Sacra from the missionary organization SIM contracted this disease in 2014. For 10 points each,

[10] Name this viral disease which causes fever, vomiting, and dangerous hemorrhaging and internal bleeding. It has a mortality rate greater than fifty percent.

Answer: **Ebola** viral disease or **Ebola** hemorrhagic fever (accept any additional information)

[10] Those three Americans contracted Ebola in this West African country; Dr. Brantly was treating Ebola patients in its capital city, Monrovia.

Answer: **Liberia**

[10] Brantly and Writebol were evacuated to this American city's Emory University Hospital, which is equipped with proper isolation units to handle Ebola.

Answer: **Atlanta**, Georgia


12. Answer some questions about Nordic influences on English language and literature, for 10 points each.

[10] This Old English epic poem romanticizes the story of the title Geat ["gate"], who aids Hrothgar, the King of the Danes, by defeating Grendel.

Answer: **Beowulf**

[10] In the Middle Ages, Vikings settled in the "Danelaw" [DAYN-law] in what is now England, and gave the English language the third-person plural pronouns we use today. Name either of those pronouns.

Answer: **they** or **them** (accept either or both underlined words)

[10] Snorri Sturluson ["snore"-y STUR-luh-son] wrote the "Prose" work of this name which, with the "Poetic" one, provides a background to many Norse myths and a description of Old Norse poetic forms.

Answer: **Edda**s [AY-dah] (accept **Eddur**; accept **Prose Edda** or **Younger Edda** or **Snorri's Edda** or **Snorra Edda**; accept **Poetic Edda**)

13. This man's self-written epitaph notes that he authored a statute for religious freedom and the Declaration of Independence and founded a university. For 10 points each,
[10] Name this Founding Father, whose epitaph neglected to mention his service as the third President of the United States.
Answer: Thomas **Jefferson**
[10] In 1819, Jefferson founded this university in Charlottesville in his home state.
Answer: University of **Virginia**
[10] Jefferson taught himself architecture, studying the work of Andrea Palladio, so he could design this mansion on his plantation near Charlottesville.
Answer: **Monticello**

14. This Greek poet described five Ages of human existence, including the Heroic Age and the current Iron Age. For 10 points each,
[10] Name the poet of *Theogony*, who wrote about the Ages of man in his *Works and Days*.
Answer: **Hesiod**
[10] In *Works and Days*, the Titan Cronus presided over this colorfully-named age that preceded the Silver and Bronze ages.
Answer: **Gold**en Age
[10] Cronus was overthrown by this god, who was the king of the Olympians from the Silver Age to the Iron Age.
Answer: **Zeus**

15. By the Lewis definition, these compounds are electron pair donors. For 10 points each,
[10] Name these compounds with pH greater than 7. A common laboratory example is sodium hydroxide.
Answer: **base**s
[10] In a neutralization reaction, a base reacts with one of these compounds to form water. Contrasting with bases, these compounds have pH values less than 7.
Answer: **acid**s
[10] In a neutralization reaction, an acid reacts with a base to form water and one of these ionic compounds. Examples include potassium nitrate and barium chloride.
Answer: **salt**s

16. In this short story, Madame Loisel [lwah-ZELL] reveals that an expensive-looking item was actually worthless. For 10 points each,
[10] Name this short story, in which Madame Forestier [foh-reh-stee-AY] struggles to replace a diamond-studded piece of jewellery.
Answer: The **Necklace** (accept La **Parure**)
[10] This French author of "Ball of Fat" wrote "The Necklace."
Answer: (Henri René Albert) Guy de **Maupassant**
[10] Maupassant's short story "The Horla" describes a creature with this quality that feeds on humans. Ralph Ellison wrote a novel about a "Man" of this type.
Answer: **invisibility** (accept word forms such as "being **invisible**")

17. The taiga biome consists mainly of plants from this group. For 10 points each,
[10] Name this group of nonflowering plants that includes cycads, ginkgos, and conifers like pine and spruce.
Answer: **gymnosperm**s (accept **Gymnospermae**)
[10] The word gymnosperm means "naked" *these* in Greek. These consist of plant embryos and their food supply inside a protective coat; edible ones include beans and peanuts.
Answer: **seed**s
[10] Most conifers have both female cones that hold the seeds and male cones that produce these grains needed for fertilization. It can be spread by both wind and insects.
Answer: **pollen**

18. For 10 points each, give the following about Nikolai Rimsky-Korsakov.
[10] A short piece by Rimsky-Korsakov features runs of sixteenth notes on violin or flute to depict the "Flight of" this stinging insect.
Answer: Flight of the **Bumblebee**
[10] Rimsky-Korsakov depicted the legendary Russian musician Sadko in an 1867 work in this genre of one-movement compositions that illustrate a story. Richard Strauss' *Also Sprach Zarathustra* is another of these works.
Answer: **symphonic poem** or **tone poem** (prompt on "program music")
[10] Another Rimsky-Korsakov symphonic poem, *Scheherazade* [shah-hare-ah-zahd], depicts stories from this work, in which Shahryar is told a series of stories about Sinbad, Ali Baba, and Aladdin.
Answer: The (1,001) **Arabian Nights** (or The **1,001 Nights**)

19. These Catholic rulers introduced the Inquisition into their land and issued the 1492 Alhambra decree, requiring all Jews to convert or leave within months. For 10 points each,
[10] Name these two rulers, who nominally united the kingdoms of Aragon and Castille with their 1469 marriage. As rulers, they supported a number of important exploration projects.
Answer: **Ferdinand** II of Aragon and **Isabella** I of Castille (accept the **Catholic Monarchs**)
[10] Ferdinand and Isabella funded this Genoan admiral, who landed in the Bahamas with a three-ship fleet in 1492.
Answer: Christopher **Columbus** (accept Cristóbal **Colón**)
[10] Also in 1492, Ferdinand and Isabella finished a war against the Nasrid dynasty in Granada, ending Muslim control in Iberia and finalizing this roughly eight-century-long period of Christian/Muslim conflict.
Answer: **Reconquista**

20. Name some things about the Einstein field equations, for 10 points each.

[10] The Einstein field equations are used in this theory that relates spacetime curvature to energy and momentum. It predicts gravitational lensing and frame-dragging, and is an elaboration on a "special" theory developed by Einstein in 1905.

Answer: **general relativity** (prompt on "relativity;" do not accept "special relativity")

[10] Einstein called this quantity his "biggest blunder," and he initially used it to predict a static universe in his equations. Modern cosmology uses this quantity to explain the accelerating expansion of the universe.

Answer: **cosmological constant** (accept **lambda**)

[10] In simple problems, the Einstein field equations reduce to this law, which states that each thing in the universe exerts an attractive force on every other thing in the universe.

Answer: Newton's Law of **Universal Gravitation** (prompt on "gravitation" or "gravity" alone)