

SCOP Novice 4 | Round 9

Brad Fischer • Jonah Greenthal • Rebecca Kobernat • Sabrina Lato • Greg Peterson • Jay Shirodkar
Kristin A. Strey • Mark Taylor • Brittany Trang • Tristan Willey • Michael H. Wong

Tossups

1. **The integral of the Dirac [dih-RAK] delta function over any interval containing 0 has this value. The probability of any event plus the probability of the event's complement equals this number. It represents (*) "true" in Boolean algebra. The logarithm of this number, with any base, is zero, since any number b to this power equals b . It is the multiplicative identity, since it times any number x equals x . For 10 points, name this smallest positive integer.**

Answer: one

2. **Quintus Dellius defected to this man's side prior to a 31 BCE battle in the Ionian Sea. The reign of this husband of Livia saw the beginning of the Pax Romana, which began shortly after this member of the (*) Second Triumvirate defeated the fleet of Marc Antony and Cleopatra at Actium and changed his name from Octavian. For 10 points, name this first Emperor of Rome, the namesake of the eighth month of the modern calendar.**

Answer: Augustus Caesar (or Octavian; prompt on Caesar; do not accept or prompt Julius Caesar)

3. **This figure helped his son and daughter-in-law, Deucalion [doo-kay-lee-on] and Pyrrha [pee-rah], survive a flood which killed the rest of humanity. To establish which parts of an animal would be sacrificed, he presented an Olympian with the choice of (*) meat or bones wrapped in fat. Before being freed by Heracles, this deity was chained to a rock, and an eagle ate his liver every day. For 10 points, identify this Greek Titan who stole fire from the gods.**

Answer: Prometheus

4. **In this work, a hospital purchases a van belonging to Alfred Simmonds, but never repaints it. Moses dreams of Sugarcandy Mountain, and revolution is stirred in this novel with the song "Beasts of England." "I will work harder" is (*) Boxer's solution for everything, and the less intelligent sheep only repeat "Four legs good, two legs bad." For 10 points, identify this Stalinist allegory about Napoleon and Snowball, a novel by George Orwell.**

Answer: Animal Farm

5. Plants in which this structure disappears into the petiole are called phyllodes. This organ contains small hair-like structures called trichomes [TRY-kohmz] on its epidermis. Transpiration rate and moisture content are maintained by this organ's waxy (*) cuticle, and gas exchange in this organ is regulated by the stomata. Pine needles and palm fronds are examples of, for 10 points, what flat plant organs in which photosynthesis takes place?

Answer: leaf or leaves (accept foliage)

6. A man wearing a gold chain places his hand on a statue in this artist's *Aristotle with a Bust of Homer*. He showed seven doctors watching a demonstration of how a cadaver's arm muscles work in *The Anatomy Lesson of (*) Doctor Nicolaes Tulp*. A girl with a chicken hanging from her belt appears in this artist's portrait of Captain Frans Banning Cocq's shooting company. For 10 points, name this Dutch artist who painted the *Night Watch*.

Answer: Rembrandt (Harmenszoon) van Rijn (accept either underlined portion)

7. The *Speedwell* failed twice while sailing with this ship, which was captained by Christopher Jones. It landed in Provincetown Harbor in Cape Cod, where men like military officer Miles Standish and governor (*) William Bradford signed a namesake "Compact" outlining the government of their new colony, Plymouth Plantation. For 10 points, name this ship that, in 1620, crossed the Atlantic to bring the first Pilgrim families to North America.

Answer: Mayflower

8. Fragments of this celestial body fall to Earth as the Orionid meteor shower. The European Space Agency launched the Giotto probe to study this object in 1986. This object, predicted to appear in 2061, is depicted on the (*) Bayeux Tapestry and appeared for the birth and death of Mark Twain. For 10 points, name this celestial body with a roughly 75 year period, a comet named for an English astronomer.

Answer: Halley's Comet

9. In a novel set in this country, a harelipped man brings his mother's ashes to Prince Albert, her birth village. This setting of *Life & Times of Michael K* and Athol Fugard's "*Master Harold*"...and the Boys is home to a novel that features (*) Stephen Kumalo's search for his son in this country's largest city. For 10 points, name this setting of Alan Paton's *Cry, the Beloved Country*, whose Apartheid-era literature reflects racial tensions in cities like Johannesburg.

Answer: Republic of South Africa

10. This actor chose a purple weapon so he could see himself as Mace Windu in large battle scenes. He asked "Where is my super suit?" as the voice of Frozone. In one film, John Travolta tells this actor that, in France, a (*) Quarter Pounder with Cheese is called a Royale with Cheese. He threatened to quit one movie if its name was changed from *Snakes on a Plane*. For 10 points, name this actor who played S.H.I.E.L.D. director Nick Fury in *The Avengers*.

Answer: Samuel L(eroy) Jackson

11. This state's Shelby County won a 2013 Supreme Court case that invalidated the formula to calculate preclearance in the Voting Rights Act of 1965. A 1963 bombing in this state killed four girls in the 16th Street (*) Baptist Church. On Bloody Sunday in 1965, protesters were prevented from marching to this state's capital from Selma. Martin Luther King, Jr. wrote the "Letter from Birmingham Jail" in, for 10 points, what state with capital Montgomery?

Answer: Alabama

12. This man wins one battle by exploding a bottle of the nectar *amrit*. Earlier, he had defeated Varuna by threatening to destroy the ocean. This character is opposed by a *rakshasa* king from Lanka, but kills (*) Ravana by firing an arrow into his chest. With the help of the monkey king Hanuman, he rescues his wife, Sita. This hero, the seventh avatar of Vishnu, is followed by Krishna as avatar. For 10 points, name this prince, the subject of a namesake Hindu epic.

Answer: Rama (accept Ramayana)

13. This author noted that "it's always ourselves we find in the sea" in "maggie and milly and molly and may." World War I inspired his novel *The Enormous Room*, and one of his poems includes the parenthetical line (*) "(with up so floating many bells down)." For 10 points, name this American poet of "anyone lived in a pretty how town," who is known for using unconventional punctuation and capitalization.

Answer: E(dward) E(stlin) Cummings

14. On the day of this event, one victim expressed concern to a fellow EVE Online player. Navy SEALs Glen Doherty and Tyrone Woods were killed in this event, which was first reported as a "spontaneous protest" of the (*) film *Innocence of Muslims* by UN Ambassador Susan Rice. For 10 points, name this September 11, 2012 attack on a diplomatic embassy in Libya that killed Ambassador Chris Stevens.

Answer: Benghazi attack (accept any additional information; prompt on "killing of Christopher Stevens," "attack on the U.S. Embassy in Libya," or other accurate descriptions that lack the name Benghazi; do not accept "9/11" attacks)

15. Minimalist Terry Riley wrote an improvisational work titled after its 53 phrases *In [this key]*. This key of both the *Jupiter Symphony* and the “Jupiter” movement of *The Planets* is the relative major of (*) A minor. Instruments pitched in this key include the double bass, tuba, and others pitched at “concert pitch”. This major key’s scale can be played on a piano without using a black key. For 10 points, name this common musical key with no sharps or flats.

Answer: C Major (prompt on “C” before “relative major;” accept C after that point)

16. In organic chemistry, hydride transfer reagents promote this process, often by converting carbonyls to alcohols. In the Krebs cycle, NAD⁺ is converted into NADH by this process. In a galvanic cell, this type of potential exists at the (*) cathode. This process is undergone by alkali metals to form cations. Hydrogenation is a form of this reaction, which is characterized by the *gain* of electrons. For 10 points, name this half-reaction that is the opposite of oxidation.

Answer: reduction (prompt on redox reactions or oxidation-reduction reactions)

17. This man wrote the introduction to Tagore's *Gitanjali* as well as the poem "The Lake Isle of Innisfree." He wrote "What rough beast...slouches toward Bethlehem to be born?" in a poem that gave Achebe's novel (*) *Things Fall Apart* its title, and reflected on Ireland's Easter Rising against British rule in “Easter, 1916.” For 10 points, name this Irish poet of “Sailing to Byzantium” and “The Second Coming.”

Answer: William Butler Yeats

18. The Beveridge Curve compares this economic concept with the number of job vacancies. Okun's Law notes that GDP will decrease by 2% if this rate increases by 1%. It can be explained by seasonal lulls in demand or, in its (*) “frictional” type, by naturally occurring transitions in the economy. The “99ers” are long-term sufferers of this phenomenon, which increases during recessions. For 10 points, give this term for people lacking work.

Answer: unemployment rate (accept word forms)

19. This ruler responded to the Kronstadt rebellion by taxing farmers instead of requisitioning their crops in his New Economic Policy. He wrote the *April Theses* on a train from Switzerland as he returned from exile in 1917, after Alexander (*) Kerensky's provisional government was forced out by this man's Bolshevik forces. For 10 points, name this leader in the Russian Revolution, the first premier of the Soviet Union, preceding Joseph Stalin.

Answer: Vladimir Ilyich Lenin (or Vladimir Ilyich Ulyanov)

20. The Chandra space telescope observes this type of radiation. The angles at which this type of radiation causes diffraction when it hits a crystal are described by Bragg's law. This type of radiation has wavelength longer than (*) gamma rays, but shorter than UV rays. When experimenting with cathode ray tubes, Wilhelm Rontgen discovered this type of radiation. For 10 points, name this type of electromagnetic radiation that is frequently used for medical imaging.

Answer: X rays (accept Rontgen rays before "Rontgen")

Bonuses

1. This work, the first in a four-part cycle, opens with a 136-bar prelude that drones to evoke the title river, in which a magical precious metal is found and forged into a powerful ring. For 10 points each,

[10] Name this first work in the *Ring of the Nibelung* cycle.

Answer: Das **Rheingold** (or The **Rhine Gold**)

[10] The *Ring Cycle*, which includes *Das Rheingold*, *Die Walkure*, and *Siegfried*, was written and composed by this German.

Answer: Richard **Wagner**

[10] In preparation for the *Ring Cycle*, Wagner oversaw the construction of one of these buildings in Bayreuth. Other famous examples include La Scala in Milan and the Civic in Chicago.

Answer: **opera house** (accept equivalents that describe a **building** whose primary function is performances of **opera**; prompt on concert hall, theater, and similar)

2. In one of these that is “in parallel”, the voltage is the same across every component. For 10 points each,

[10] Name these networks of electrical elements through which current can flow in a closed loop.

Answer: electrical **circuits**

[10] This law that is often used when analyzing circuits states that the voltage equals the product of current and resistance.

Answer: **Ohm's** law

[10] This German physicist names two rules about circuits, one of which states that the sum of the currents into and out of a junction is zero.

Answer: Gustav (Robert) **Kirchhoff** [KEER-kawff]

3. In December 1963, three French journalists landed on Surtsey, a new island created by volcanic activity south of this country, and jokingly planted a French flag. For 10 points each,

[10] Name this nordic island country, which is home to many geysers.

Answer: Republic of **Iceland**

[10] In 1986, this capital of Iceland hosted a nuclear arms reduction summit.

Answer: **Reykjavik** [ray-KYA-vik]

[10] At the 1986 Reykjavik Summit, Soviet leader Mikhail Gorbachev expressed concern to U.S. President Ronald Reagan over the Strategic Defense Initiative, a proposed missile defense system colloquially known by this two-word phrase.

Answer: **Star Wars**

4. Give the following about a pair of Canadian provinces for 10 points each.

[10] Cities in this most populous Canadian province include Windsor, across the US border from Detroit, Thunder Bay, on the north shore of Lake Superior, and Toronto, on the north shore of its namesake Great Lake.

Answer: Ontario

[10] The southern half of this prairie province west of Ontario and east of Saskatchewan is dominated by Lake Winnipeg.

Answer: Manitoba

[10] Lake of the Woods lies at the border between Ontario, Manitoba, and this US state. Its remarkably cold city of International Falls lies on the Ontario border.

Answer: Minnesota

5. This essay contains the line “a foolish consistency is the hobgoblin of little minds.” For 10 points each,

[10] Identify this Transcendentalist essay in which the speaker urges the reader to “trust thyself.”

Answer: Self-Reliance

[10] “Self-Reliance” was a work by this contemporary of Thoreau, who wrote “The American Scholar” and “The Oversoul.”

Answer: Ralph Waldo Emerson

[10] This Emerson essay presents the idea of a transparent eyeball, and says “if a man would be alone, let him look at the stars” in advocating that man leave society in favor of the title location.

Answer: Nature

6. Board games, even the classics, tend to have seemingly made-up rules. For 10 points each,

[10] In this game, knights, but no other pieces, get to jump over pieces, while the *en passant* rule allows pawns in this game to capture an opposing pawn in blatant violation of its normal capturing rules.

Answer: chess

[10] This chess move involves a king moving two squares at once while a rook jumps to the space between where the king was and where the king ended.

Answer: castling (accept word forms)

[10] This Norwegian grandmaster became the youngest player in history to reach the world #1 ranking in 2009, and will face Viswanathan Anand in November 2013 for the World Chess Championship.

Answer: Magnus Carlsen

7. A collection of “Tales” published as a sequel to this novel contains stories of the trickster hero El-ahrairah. For 10 points each,

[10] Name this Richard Adams novel in which Hazel and Bigwig succeed in rescuing a group of females from Efrafa and begin a new life in the title warren.

Answer: Watership Down

[10] The characters in *Watership Down* are this kind of animal. Another of these animals has three sisters named Flopsy, Mopsy, and Cottontail, and unwisely enters Mr. McGregor’s garden.

Answer: rabbits (accept bunny/ies; accept leporidae or leporines)

[10] This author wrote stories about the Puddle-Ducks and Tom Kitten, as well as stories about Flopsy, Mopsy, Cottontail, and Peter Rabbit.

Answer: (Helen) Beatrix Potter

8. This quantity is greater than 1 for a hyperbola, exactly 1 for a parabola, and exactly 0 for a circle. For 10 points each,

[10] Give this measurement associated with conic sections, which can be thought of as measuring how far off the shape is from being a circle.

Answer: eccentricity

[10] This conic section has eccentricity strictly between 0 and 1.

Answer: ellipse

[10] Conic sections are formed by the intersection of a plane with a double cone. A circle is formed if the plane has this property with respect to the axis of the cone.

Answer: the plane is perpendicular to the axis of the cone (or orthogonal or normal)

9. This man reconstructed the Kaaba [kah-bah] with his father. For 10 points each,

[10] Name this religious figure, the half-brother of Isaac, who was sent into the desert as an infant with his mother, Hagar.

Answer: Ishmael (accept Ismail)

[10] Ishmael was the son of this man, who was also the father of Isaac by his wife, Sarah.

Answer: Abraham (accept Ibrahim)

[10] When Hagar prayed for water in the desert, God provided this well, located in the Masjid al-Haram [mahs-jeed aal-hah-rahm] in modern Mecca.

Answer: Zamzam well (accept Well of Zamzam)

10. Henry Clay urged this man to not resign his post as Secretary of State under John Tyler. For 10 points each,

[10] Name this Northern statesman who, along with Clay and John C. Calhoun, made up a “great triumvirate.”

ANSWER: Daniel Webster

[10] Webster represented this New England state in the Senate. Elbridge Gerry, the namesake of gerrymandering, was this state’s governor. The Missouri Compromise split off this state’s northern neighbor, Maine.

ANSWER: Massachusetts

[10] As a lawyer, Webster successfully argued this Supreme Court case regarding steamship navigation. This case established that states cannot interfere with Congress’s regulation of interstate commerce.

ANSWER: Gibbons v. Ogden

11. At the end of *The Restaurant at the End of the Universe*, this number is given as the product of six and nine, which only works in base 13. For 10 points each,

[10] Give this number, the Ultimate Answer to Life, the Universe, and Everything, according to *The Hitchhiker’s Guide to the Galaxy*.

Answer: 42

[10] The Ultimate Answer is calculated, over the course of seven and a half million years, by this massive supercomputer, which was built by an alien race. Unfortunately, this computer does not provide the Ultimate Question.

Answer: Deep Thought

[10] To discover the Ultimate Question, Deep Thought includes living beings in its design of this massive supercomputer, making you--and all humans--a part of this planet’s program.

Answer: Earth

12. He was the first chemist to isolate a pure sample of heavy water. For 10 points each,

[10] Identify this American chemist whose namesake “dot diagrams” show how valence electrons form bonds or exist as lone pairs.

Answer: Gilbert N(ewton) Lewis

[10] Lewis defined these substances as acceptors of electron pairs. They have a low pH in solution.

Answer: (Lewis) acids

[10] A substance that fits the Lewis acid definition but not other popular definitions is the trifluoride of this group 13 metalloid.

Answer: boron (or boron trifluoride; prompt on B or BF₃)

13. Buildings in this city include the Eero Saarinen-designed JFK International Airport and the Chrysler Building. For 10 points each,

[10] Name this American city that is divided into five boroughs and is home to the Empire State Building.

Answer: **New York** City

[10] This architect designed the Seagram Building in New York City. He is known for the maxims "God is in the details" and "Less is more."

Answer: Ludwig **Mies** van der Rohe (prompt on "Rohe" or "van der Rohe")

[10] This building is 1,776 feet tall and is the tallest building in the western hemisphere. It stands next to the 9-11 Memorial at Ground Zero.

Answer: **One World Trade Center** (accept **Freedom Tower**; do not accept or prompt on "World Trade Center")

14. For 10 points each, give the following about German philosopher Martin Heidegger.

[10] In this 1927 magnum opus, Heidegger delineates the concept of "being there," or *dasein* [DAH-zyne], as it relates to the particularly human experience of being.

Answer: **Being and Time** (or **Sein und Zeit**)

[10] Being and Time was heavily influenced by this ancient Greek philosopher's Nicomachean Ethics. This student of Plato also wrote Rhetoric, Poetics, and the Organon, a collection of works on logic.

Answer: **Aristotle**

[10] In 1933, Heidegger was named rector of a German university and joined this political party that controlled Germany's Third Reich.

Answer: **Nazi** Party (or **National Socialist** German Workers' Party)

15. This World Heritage site was accidentally bombed by U.S. Navy planes in July 2013. For 10 points each,

[10] Name this incredibly biodiverse natural landmark that stretches for over 1,500 miles along Australia's northeast coast.

Answer: **Great Barrier Reef** (prompt on Barrier Reef; prompt on reef; prompt on, but do not otherwise reveal, coral reef; do not accept or prompt on "coral")

[10] The Great Barrier Reef is a large system of these invertebrates that are made up of polyps. These organisms gain their vibrant colors from symbiotic algae.

Answer: **corals**

[10] Rising water temperatures and other environmental effects can cause algae to be expelled from the coral, causing the coral to undergo this effect and turn white.

Answer: coral **bleaching** (accept word forms)

16. This physical organ was called the haty, and its spiritual essence was the ib. For 10 points each,

[10] Name this organ, important in ancient Egyptian myth, which was weighed against a feather to judge the purity of the soul after death.

Answer: heart

[10] The Weighing of the Heart ceremony was judged by this jackal-headed god who governed mummification and entry into the afterlife.

Answer: Anubis

[10] The heart was weighed against this goddess's feather. She represented truth, balance, law and justice.

Answer: Maat (accept Mayet)

17. An alliance between Chandragupta Maurya and Seleucus was forged with the trading of 500 of these military units. For 10 points each,

[10] Name these animals. During the Second Punic War, the Carthaginian army tried to cross the Alps with a force of these animals, which are intended more to trample over the enemy than to impale them on their ivory tusks.

Answer: war elephants

[10] This Carthaginian, the son of Hamilcar Barca, led the elephants over the Alps during the Second Punic War against Rome.

Answer: Hannibal Barca

[10] This Roman farmer and statesman inspired the Third Punic War and sacking of Carthage by ending all of his speeches "Carthago delenda est," or "Carthage must be destroyed!"

Answer: Cato the Elder (prompt on Cato)

18. Humans have the smooth type of this tissue in their gastrointestinal tract. For 10 points each,

[10] Name this type of tissue. For humans, the largest example is the gluteus maximus.

Answer: muscle tissue

[10] The shoulder is covered by this muscle, named for its triangular shape.

Answer: deltoid(s) (accept deltoideus; prompt on delt)

[10] A lack of this mineral causes muscle fatigue. This electrolytic ion is found within the cell and swaps places with sodium during active transport.

Answer: potassium (prompt on K)

19. This man's collection *The Spleen of Paris* includes the poem "Let's Beat up the Poor!" in which he attacks a beggar in the street; the beggar's counterattack breaks four of this man's teeth. For 10 points each,

[10] Name this French symbolist poet, more famous for the collection *Le Fleurs du Mal*, or *The Flowers of Evil*.

Answer: Charles **Baudelaire**

[10] Baudelaire's book *Artificial Paradises* discusses an addiction to this drug. Thomas DeQuincey wrote *Confessions of an English "eater"* of this drug, which is obtained from poppy plants.

Answer: **Opium**

[10] Baudelaire's poetry was highly praised by this French author who described involuntary memories triggered by dipping a madeline into tea in *In Search of Lost Time*, or *Remembrance of Things Past*.

Answer: Marcel **Proust**

20. The Supreme Court case *Lochner v. New York* struck down a law limiting this concept to 10. For 10 points each,

[10] Name this measurement of labor. The 1938 Fair Labor Standards Act limited this concept, for most workers, to 8.

Answer: **daily working hours** (accept **eight-hour workday**; accept logical equivalents that describe the number of **hours** that one can legally **work** in a **day**; prompt on any answer that gives one or two of the required parts)

[10] In 1914, this Detroit car manufacturer cut shifts from nine hours to eight and more than doubled wages to \$5 per day for most workers making Model Ts.

Answer: **Ford** Motor Company (accept Henry **Ford**)

[10] In response to strike concerns, the 1916 Adamson Act created the eight-hour workday for workers in this industry. The Pullman strike brought this industry to a halt in 1894.

Answer: **railroad** workers (accept logical equivalents that describing working with **trains**)