



HSAPQ

High School Academic Pyramid Questions

2008-2009
Four Quarter Set

Round 6

First Quarter:
Ten Tossups

1. The D'Entrecasteaux Channel separates this state from Bruny Island while the Mercury Passage lies between it and Maria Island. Named after its first Chief Justice and created by damming up the Serpentine River, its largest body of water is Lake Pedder while its longest rivers include the Huon, Tamar and Derwent. Large cities include Burnie, Devonport and Launceston while its highest point is at Mount Ossa. Originally named Van Diemen's Land, for 10 points, name this Australian state with capital at Hobart, an island known for its namesake "devil."

ANSWER: Tasmania

2. One of this band's songs begins and ends with the lines "If the sun refused to shine, I would still be loving you./When mountains crumble to the sea, there will still be you and me." In addition to the songs "No Quarter" and "Thank You," this band recorded the albums *In Through the Out Door*, *Physical Graffiti*, and *Houses of the Holy*. They consisted of John Bonham on drums, John Paul Jones on bass guitar, Robert Plant on vocals, and Jimmy Page on guitar. For 10 points, name this rock group of the songs "Kashmir" and "Stairway to Heaven."

ANSWER: Led Zeppelin

3. Planck's constant times the frequency of a photon is equal to the value of this quantity for electrons plus the work function, according to the photoelectric effect. For ideal gases, it is equal to three halves times Boltzmann's constant times temperature. This quantity is not conserved in inelastic collisions, and can be written as momentum squared over 2 times mass. For 10 points, identify this quantity equal to one half times mass times velocity squared, which is possessed by an object by virtue of its motion.

ANSWER: kinetic energy [prompt on energy]

4. This polity was unified when the Tara Confederation won the Battle of Clontarf. In the seventeenth century, it was the site of the Battle of Drogheda (DROH-duh) and the Battle of the Boyne. Its later leaders included Daniel O'Connell and Charles Parnell, and it finally gained self-government after the passage of the Home Rule Act. The site of the Ulster Rebellion, this country is home to the political parties Fianna Fail and Sinn Fein. For 10 points, name this country which suffered a terrible potato famine.

ANSWER: Ireland

5. This man argued that creation was a special type of participating in society in "On the Origins of the Work of Art," found in *Poetry, Language, and Thought*. Like Max Weber, he gave a noted address at Freiburg, though his was called "What is Metaphysics?" The most famous work of this teacher of Hannah Arendt argued that the three fundamental human features are factuality, existentiality, and fallenness. The author who articulated his idea of *sein* and *dasein*, for 10 points, name this Nazi-sympathizing philosopher who wrote *Being and Time*.

ANSWER: Martin Heidegger

6. This novel's protagonist marries Valeria, only for her to leave him for a Russian cab driver. Later, he marries his landlady, after whose death her daughter enrolls at Beardsley and gets a role in a play along with her friend Mona called *The Enchanted Hunters*, a name shared by an inn visited earlier in the book. The play was written by Clare Quilty, a doppelganger to the protagonist, who still remembers fondly his boyhood love Annabel Leigh. For 10 points, name the travel narrative about Dolores Haze and Humbert Humbert, written by Vladimir Nabokov.

ANSWER: **Lolita**

7. Functional groups equivalent to small cyclic ones may be formed from alkenes in a reaction named for Sharpless. Typical examples are excellent solvents, commonly used for Grignard reagents because they are aprotic. One cyclic type of these is commonly used to dissolve cations in nonpolar solvent, the crown type, and the most common synthesis of them is named for Williamson. For 10 points, identify this class of organic compounds whose diethyl example was a common anesthetic.

ANSWER: **ethers**

8. The first fighting in this battle broke out when men in Henry Heth's division encountered William Gamble's brigade along Chambersburg Pike. Gamble was in Buford's division of dismounted cavalry who secured high ground at Seminary Ridge. The second day of this battle saw the bayonet charge of Chamberlain's Twentieth Maine at Little Round Top, and the third day saw the disastrous Pickett's charge. For 10 points name this Pennsylvania Civil War battle, often considered the turning point in the war.

ANSWER: Battle of **Gettysburg**

9. The protagonist's brother John, originally a carpenter, became a businessman and politician, while his sister has become a prostitute and alcohol dealer. Beginning when the protagonist receives a telegram from Theophilus Msimangu imploring him to help his sister Gertrude, the protagonist also meets an activist for racial justice, the father of the man the protagonist's son murdered, named Arthur Jarvis. For 10 points, identify this novel chronicling Stephen Kumalo's search for his son Absalom in Johannesburg, South Africa, written by Alan Paton.

ANSWER: **Cry, the Beloved Country**

10. A viola pizzicato part is commonly added in performances of this piece, and a variation of it was used when the "three boys" escort Tamino and Papageno in *The Magic Flute*. This work is actually a passacaglia, and it draws from several contemporary variations on *La Folia*. Its composer also wrote the "Hexachordum Apollinis" and originally paired this work with a gigue. Each part that is not the continuo enters playing a D major scale from F sharp down to A and up to D. For 10 points, name this piece of music by Johann Pachelbel.

ANSWER: Pachelbel's **Canon** [or **Canon in D**; or **Canon and Gigue in D** major for three Violins and Basso Continuo]



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Second Quarter:
Ten Tossups
with Bonuses

1. Giorgio Vasari noted that “the Marforio at Rome” is not “equal to it in any respect”, and earlier recalled that its artist pretended to change the nose, heeding a request by Piero Soderini. A wooden framework and rope suspension for it were created by Giuliano da san Gallo and his brother, and it was transported to the Piazza della Signoria. Rossellino was briefly contracted to take it up where Duccio had left, and it drew on the *contrapposto* of Greek art. For 10 points, name this marble sculpture in Florence by Michelangelo of a figure about to kill Goliath.

ANSWER: Michelangelo’s **David**

BONUS. The average form of this quantity intersects the marginal cost curve at its minimum. For 10 points each:

[10] Identify this quantity, the difference between fixed costs and total costs

ANSWER: **variable** costs

[10] In economics, this term refers to a situation of zero profit. It also describes goods whose demand increases when income increase, as opposed to inferior goods.

ANSWER: **normal** profit [or **normal** goods]

2. He lived in exile in New Orleans from 1853 to 1855, and in 1857 he was selected to preside over the Supreme Court by Ignacio Comonfort. His namesake law abolished special courts for the clergy and military, and he was a chief author of the Plan of Ayutla. He died while suppressing a revolt of Porfirio Diaz, and he is the namesake of El Paso’s sister city across the Rio Grande. For 10 points, name this Indian president of Mexico, who fought the occupation of Emperor Maximilian.

ANSWER: Benito **Juarez**

BONUS. He is 87 going on 88 in *The Prairie*, but his age is somewhat indeterminate in any of the other books in which he appears. For 10 points each:

[10] Name this best friend of Chingachgook and hero of five *Leatherstocking Tales*.

ANSWER: **Natty Bumppo** [accept either or both names]

[10] Name the creator of Natty Bumppo and the author of the *Leatherstocking Tales*, which includes *The Last of the Mohicans*.

ANSWER: James Fenimore **Cooper**

3. The protagonist stays with her aunt and uncle, the Gardiners, in London after rejecting a proposal from the pompous William Collins, who ends up marrying her best friend Charlotte Lucas. The soldier George Wickham is revealed as a liar when he elopes with the protagonist’s sister Lydia, and another of the protagonist’s sisters, Jane, marries Mr. Bingley. For 10 points name this novel in which Elizabeth Bennet marries Fitzwilliam Darcy, a work of Jane Austen.

ANSWER: **Pride and Prejudice**

BONUS. For 10 points each, name these Soviet leaders.

[10] This dictator during World War II executed millions in his purges and sent millions more to the labor camp system known as the gulag.

ANSWER: Joseph **Stalin** [accept Ioseb Besarionis dze **Jughashvili**]

[10] This successor to Stalin began de-Stalinization during the “Secret Speech,” presided over the thaw, initiated the Cuban missile crisis, and supposedly banged his shoe during a debate.

ANSWER: Nikita Sergeevich **Khrushchev**

4. Although six genes encode this protein in humans, some plants have over sixty genes for it. This protein exhibits a phenomenon known as treadmilling, in which G monomers attach to the plus end and detach from the minus end of its F filament. The most abundant intracellular protein in eukaryotic cells, this protein is absent in the H zone of the sarcomere. For 10 points, name this protein that slides along myosin to produce muscle contraction.

ANSWER: **actin**

BONUS. It contains Harney Peak, the highest point east of the Rockies in the U.S. For 10 points each:

[10] Name this range, whose other landmarks include the Crazy Horse Memorial and Mount Rushmore.

ANSWER: the **Black Hills** [or **Paha Sapa**]

[10] The Black Hills are primarily located in this state, which shares lakes Oahe and Lewis and Clark with its northern and southern neighbors, respectively.

ANSWER: **South Dakota**

5. This man introduced the Reducing Americans’ Vulnerability to Ecstasy Act as chairman of the International Narcotics Control Caucus. He was twice chair of the Foreign Relations Committee after being disgraced in 1988 for plagiarizing a British politician’s speeches. This man accused Rudy Giuliani of mentioning “a noun, a verb, and 9/11” in every sentence, and he originally dropped out of the 2008 Presidential race after placing fifth in the Iowa caucus. For 10 points, identify this senior senator of Delaware, the current Vice President of the United States.

ANSWER: Joseph Robinette “Joe” **Biden**, Jr.

BONUS. His works were catalogued by Anthony van Hoboken, and he wrote the “Theresienmesse,” a mass named for Maria Theresa. For 10 points each:

[10] Identify this composer of the “Gypsy” trio, not to mention symphonies like *Farewell* and *Philosopher*.

ANSWER: Joseph **Haydn**

[10] In German, this Haydn symphony is referred to as “with the kettledrum stroke,” which is the loud chord that gives it its nickname, coming suddenly in the middle of the second movement.

ANSWER: “**Surprise**” symphony [or Symphony no. **94** in G major; or **Hoboken 1/94**]

6. One period in this country’s history saw the formation of the Bar Confederation and the later War in the Defense of the Constitution to restore home rule. During the same time period, the Four Year Sejm (SAME) was opposed by the Targowica Confederation. Later in this nation’s history, the Sanacja party was founded to fight corruption, and a trade union was founded in its Lenin Shipyards, called Solidarity. For 10 points, name this oft-partitioned European country whose leaders have included Jozef Pilsudski, Lech Walesa and Casimir Pulaski.

ANSWER: Republic of **Poland** [*Rzeczpospolita Polska*]

BONUS. Name these search algorithms, for 10 points each.

[10] This simple search technique locates an element in a sorted list by comparing the target element to the middle element of the list, and recursing on half of the list until the element is found.

ANSWER: **binary** search

[10] This pathfinding algorithm, named for the author of "GO TO Statement Considered Harmful", finds the shortest path between two nodes in a graph without negative edge costs.

ANSWER: **Dijkstra's** algorithm

7. A Van Deemter plot is used to determine the minimum theoretical plate height necessary to perform this procedure. One type of this procedure often uses agarose as an "affinity matrix", while proteins are separated by charge in the "ion exchange" variety of it. Forensic analysis of gel pens is one application of the "high-performance-liquid" type of this procedure, which also comes in thin-layer, gas, and paper varieties. For 10 points, name this lab technique in which a mobile phase passes through a stationary phase, from the Greek for "color writing."

ANSWER: **chromatography** [accept **column chromatography** before "affinity"]

BONUS. He was sent to King Iobates to be slain, but Iobates let him marry his daughter instead. For 10 points each:

[10] Name this Greek hero who slew the Chimera.

ANSWER: **Bellerophon**

[10] This flying horse and Chrysaor were the offspring of Poseidon and Medusa. In most versions, Bellerophon rode him when he fought the Chimera.

ANSWER: **Pegasus**

8. In this novel, the tenor Ralph Simmons is infuriated by an anecdote about an audience throwing six benches. The protagonist is assured that love "is a religious feeling" while playing billiards with the ninety-four-year-old Count Greffi, and earlier is injured by a mortar shell while handing out macaroni. The protagonist is introduced to his lover by Rinaldi and eventually abandons the army during the battle of Caporetto before fleeing to Switzerland, where Catherine Barkley dies in childbirth. For 10 points, name this novel about Frederic Henry written by Ernest Hemingway.

ANSWER: A **Farewell to Arms**

BONUS. The membrane of these objects contains photosystems, and stacks of them are called grana. For 10 points each:

[10] Name these membranes in which the light reactions take place.

ANSWER: **thylakoids**

[10] In plants, thylakoids are found in this chlorophyll-containing organelle. Like with the mitochondria, the endosymbiotic theory explains the evolution of these organelles.

ANSWER: **chloroplasts**

9. Friedrich Engels's *The Origin of the Family* is based on Karl Marx's notes to this man's magnum opus. He documented a rodent in his *The American Beaver and His Works*, and his attempts to collaborate with his peers around the world resulted in *Systems of Consanguinity and Affinity*. In another work, he claimed that humans progress through savagery and barbarism to get to civilization. For 10 points, name this author of *Ancient Society*, a pioneering American anthropologist who worked with the Iroquois.

ANSWER: Lewis Henry **Morgan**

BONUS. The title character secures a large amount of silver for himself, after the boat it was being carried on is reported sunk. For 10 points each:

[10] Name this novel, which centers on the fictional republic of Costaguana.

ANSWER: **Nostramo**

[10] *Nostramo* was written by this Polish-born British novelist of *Youth* and *Heart of Darkness*.

ANSWER: Joseph **Conrad** [or Józef Teodor Konrad Nalecz **Korzeniowski**]

10. Uttaradhyana provides an account of the explanation of this to Kesi, a disciple of Parava. The samparyahka posture facilitates its occurrence in an account by Kalpasutra. Nirodha, subha, and satya are three of its eight attributes, while it is described as “expedient means” in the Lotus Sutra. It is often likened to Satori, which, like Kensho is temporary, but this concept implies freedom from samsara, the cycle of rebirth, and from suffering. For 10 points, name this state of perfect peace attained by the Gautama Buddha.

ANSWER: **Nirvana** [prompt on **enlightenment**]

BONUS. His Secretary of State wrote the autobiography *As I Saw It*. For 10 points each:

[10] Name this President, who worked with Dean Rusk to approve the Bay of Pigs invasion and was assassinated by Lee Harvey Oswald in 1963.

ANSWER: John Fitzgerald **Kennedy** [or **JFK**]

[10] A former president of Ford Motor Company, this Secretary of Defense under JFK later served as President of the World Bank and apologized for his role in the Vietnam War.

ANSWER: Robert Strange **McNamara**



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Round 6

Third Quarter:
Team Rounds

Choices: BRAVE NEW WORLD
1984

BRAVE NEW WORLD

This round boldly goes where no round has gone before!

[10] This Dutchman discovered a new world with his microscope, as his letter to Robert Hooke is believed to be the first documented evidence of seeing bacteria.

ANSWER: Anton/Antony von **Leeuwenhoek**

[10] Characters created by this author spent *Five Weeks in a Balloon*, went *20,000 Leagues Under the Sea*, discovered *The Mysterious Island*, and took a *Journey to the Center of the Earth*.

ANSWER: Jules **Verne**

[10] Along with William James, this German author of *Principles of Physiological Psychology* is credited with the development of some newfangled social science called psychology in 1875.

ANSWER: Wilhelm Maximilian **Wundt**

[10] During his quest to obtain these objects from the Hesperides, Heracles apparently fell off the edge of the Earth to converse with Atlas, who ended up getting them for him.

ANSWER: golden **apples**

[10] This German's fifteenth-century invention of the printing press suddenly made books a lot cheaper than they used to be, and revolutionized the distribution of the written word forever.

ANSWER: Johannes Gensfleisch zur Laden zum **Gutenberg**

[10] Explorer Francisco Pizarro's murder of Atahualpa signalled Spanish control over this empire, the last native rulers of Peru.

ANSWER: the **Incas**

[10] This painter of *Boy with a Squirrel* and *Watson and the Shark* was one of the first American artists to gain the respect of Europe.

ANSWER: John Singleton **Copley**

[10] It was once thought that no ship would ever pass Cape Bojador, which is now part of this disputed territory claimed by its northern neighbor, Morocco.

ANSWER: **Western Sahara**

[10] We may never get there, but this object, designated M31 in the Messier catalog, is the closest galaxy to our own.

ANSWER: **Andromeda** Galaxy

[10] Name the hallucinogen consumed ubiquitously throughout Aldous Huxley's novel, *Brave New World*.

ANSWER: **soma**

1984

Big Brother is watching as you answer these questions about events of the year 1984.

[10] The 1984 Nobel Prize in Physics went to Carlo Rubbia and Simon van der Meer for their discovery of the W and Z particles, which mediate this fundamental force that causes beta decay.

ANSWER: **weak** nuclear force/interaction

[10] In 1984, Brunei became independent from the United Kingdom. Name the island it shares with the Indonesian province of Kalimantan and the Malaysian states of Sabah and Sarawak.

ANSWER: **Borneo**

[10] After the complete failure of Operation Blue Star, this Indian Prime Minister was assassinated by her Sikh bodyguards in 1984.

ANSWER: **Indira Priyadarshini Gandhi** [prompt on **Gandhi**]

[10] In 1984, Richard Meier became the sixth Laureate of this prize sponsored by the Hyatt Foundation. It is the most prestigious prize awarded in architecture.

ANSWER: **Pritzker** Architecture Prize

[10] A 1984 disaster in Bhopal, India occurred at a plant producing methyl isocyanate. One product of its violent reaction with water is this triatomic gas, also a product of combustion.

ANSWER: **carbon dioxide** [or **CO₂**]

[10] At the 1984 Republican National Convention, Gregory Johnson protested by doing *this*, which was found to be protected by the First Amendment in the *Texas v. Johnson* case.

ANSWER: **burning** the American **flag** [accept obvious equivalents]

[10] In 1984, this Czech writer of *The Joke* published his best-known work, which follows Tomas, Tereza, Sabina, and Franz and is entitled *The Unbearable Lightness of Being*.

ANSWER: Milan **Kundera**

[10] This French philosopher, who wrote *Madness and Civilization* and *The History of Sexuality*, died in 1984.

ANSWER: Michel **Foucault**

[10] *Akhnaten*, an opera by this minimalist composer also responsible for *Einstein on the Beach*, *Satyagraha*, and several film scores, premiered in 1984.

ANSWER: Philip **Glass**

[10] Name the rat-fearing protagonist of George Orwell's *1984*, who finally accepts that he loves Big Brother.

ANSWER: **Winston Smith** [either or both names]



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Fourth Quarter:
Ten Tossups

1. One character in this work dies at Aix-la-Chapelle, and leaves behind a lot of insurance money for the protagonist. The protagonist is offered a hand in marriage by Sir Pitt before she reveals that she is secretly married to Rawdon. Captain Dobbin is supportive of a character who has an unhappy marriage with George Osborne, and this work traces the lives of two girls from Miss Pinkerton's Academy. Taking its name from *Pilgrim's Progress*, for 10 points, identify this novel about Amelia Sedley and the scheming Becky Sharp, a work by William Makepeace Thackeray.

ANSWER: **Vanity Fair**

2. One part of this initiative was the creation of the Department of Transportation and this also led to the creation of the Center for Public Broadcasting and National Public Radio. The Elementary and Secondary Transportation Act set the precedent of national funding for public schools and this program created the Head Start preschool system. Other reforms under this sweeping moniker include Food Stamps, Medicare, and the Civil Rights Act of 1964. For 10 points name this set of domestic reforms initiated by Lyndon B. Johnson.

ANSWER: **Great Society**

3. In architecture, this movement is exemplified by the exterior of Bavaria's Wies Cathedral, designed by Dominikus Zimmerman, and Bartolomeo Rastrelli designed a St Petersburg landmark in this style. In addition to *A Young Girl Reading*, *The Captured Kiss* and *Shop-Sign of Gersaint*, works of this movement include *The Toilet of Venus*, *Pilgrimage to Cythera*, and a painting with a big pink dress in it, *The Swing*. For 10 points, name this eighteenth-century French art movement that included Francois Boucher, Jean Fragonard and Antoine Watteau.

ANSWER: **Rococo**

4. The foliage of one tree located in this place is a kenning for gold. In addition to Glasir, it contains the tree Laeraor, which provides foliage for the hart Eikpyrnir and the goat Heidrun. Its benches are strewn with coats of mail, and an eagle notably flies over this location. In the courtyard of this place are numerous men battling each other, which the einherjar partake in after eating and drinking mead out of horns. Balder died during a throwing contest in this place, which valkyries direct guests to. For 10 points, name this hall of slain warriors in Norse mythology.

ANSWER: **Valhalla** [or **Valhöll**, prompt on **Asgard** before "courtyard"]

5. Max Perutz showed that this molecule is formed of four polypeptide chains that rearrange during its most important function. The recessive disease Thalassemia results in a defective version of the alpha or beta version of this molecule. The Bohr effect deals with the results of CO₂ levels on this protein, and a point mutation from glutamate to valine on this protein's beta chain causes sickle cell anemia. For 10 points, name this oxygen-carrying protein in red blood cells.

ANSWER: **hemoglobin**

6. One of the major consequences of this war was the transfer of the *asiento* slave-trading privilege. The treaties of Baden and Rastatt were signed in addition to the major treaty that ended it, and a major battle in it saw Tallard's forces defeated by Eugene of Savoy and Marlborough at Blenheim. The American phase of this war was called Queen Anne's War, and it ended with the Treaty of Utrecht in 1713. For 10 points, name this conflict which was sparked by Louis XIV's attempts to gain power from the heir to Carlos II in a neighboring country.

ANSWER: War of the **Spanish Succession**

7. His letters about the abandonment he felt when his father died were published in *The Fourteenth Chronicle*, and Stan Emery's suicide by setting his apartment on fire disheartens Ellen Thatcher, who is married to Jimmy Herf in his novel *Manhattan Transfer*. Don Fuselli, Chrisfield and Andrews are the title characters of his novel *Three Soldiers*, while his most famous work is noted for the "Camera Eye" writing technique. For 10 points, name this author of *The 42nd Parallel*, *1919*, and *The Big Money*, which make up his *U.S.A. Trilogy*.

ANSWER: John **Dos Passos**

8. Both types of this wane during a process that includes "response topography," extinction, which can be preceded by an extinction burst. Kamin's Blocking Effect is one reason that doing this twice in a row might not work. One method for doing this is governed by Thorndike's Law of Effect and can be accomplished using B.F. Skinner's namesake box. Another method for doing this caused dogs to drool when Pavlov rang a bell. For 10 points, name this type of learning that is divided into "classical" and "operant" types.

ANSWER: **conditioning** [accept **operant conditioning** before "Kamin" is read]

9. Wenzel's law states that the absolute value of this function for a contact angle with a rough surface is always greater than that for a contact angle with a smooth surface. The weight is multiplied by this function of the contact angle to yield the normal force exerted by an inclined surface, and the magnitude of work is found by multiplying force, distance, and this function of the angle between exerted force and direction of movement. For 10 points, name this function that appears in the dot product and is represented as adjacent leg over hypotenuse.

ANSWER: **cosine**

10. In one of his operas, the title character is called to Buoso Donati's deathbed and Laretta sings "O mio babbino caro." In addition to *La Rondine* and *Gianni Schicchi*, this man composed an opera where the bandit Dick Johnson sings "Ch'ella mi creda" and loves the title bar-owner Minnie. This composer of *The Girl of the Golden West* wrote about Baron Scarpia and composed another opera where Rodolfo's lover Mimi dies of consumption. For 10 points, name this composer of *Tosca*, *La Boheme*, and an opera about Cio-Cio San, *Madama Butterfly*.

ANSWER: Giacomo **Puccini**