



HSAPQ

High School Academic Pyramid Questions

2008-2009
NSC-Format Set #1

Round 2

Related Tossups &
Bonuses

1. Zeckendorf representation describes integers as the sum of these, and they can be found by Binet's formula. "z over the quantity 1 minus z minus z squared" is their generating function, and they are a case of the Lucas sequence. Euclid's algorithm is slowest for these since their ratio is given by a continued fraction with all 1's, which converges to the golden ratio at infinity. They give the number of ways to tile a 2 by n strip and model reproducing rabbits. For 10 points, name these numbers equal to the sum of the two previous ones, beginning 1, 1, 2, 3, 5, 8, 13, 21, 34, etc.

ANSWER: **Fibonacci** numbers or sequence

Identify these relationships between organisms, for 10 points each.

[10] Giardia is one example of an organism that participates in this sort of relationship, in which the host is harmed and another organism benefits.

ANSWER: **parasitism**

[10] An example of this relationship is phoresy, where the one organism benefits from transportation. In general, one organism is unaffected while another benefits.

ANSWER: **commensalism**

2. This thinker discussed how people in the United States can be part of the "third generation" in the work *And Keep Your Power Dry*. This author published a transcript of a conversation with James Baldwin in *A Rap on Race*, and discussed the female-dominant Chambri tribe in *Sex and Temperament in Three Primitive Societies*. Research for her most famous work was conducted on the island of Tau, and was refuted by Derek Freeman. For 10 points, name this anthropologist who conducted a study of adolescent sexuality in *Coming of Age in Samoa*.

ANSWER: Margaret **Mead**

This man came up with the Maxwell House "coffee break" campaign. For 10 points each.

[10] Name this American psychologist who wrote *Psychological Care of Infant and Child*, and who was later forced to leave Johns Hopkins because of an affair with an assistant.

ANSWER: John **Watson**

[10] In one experiment, Watson conditioned this "little" eleven month year old boy to develop a fear of white rats.

ANSWER: Little **Albert**

3. Generals of this man won the battles of Nisibis, Callinicum and Dara, after which he concluded the Eternal Peace with Khosrau. Other battles fought by the generals of this man include Ad Decimum and Tricamarum. Peter Barsymes served as financial adviser to this man, and another adviser, John the Cappadocian, was a leading cause of the Nika riots. Narses and Belisarius were among his generals, and Tribonian compiled his namesake legal code. For 10 points, name this builder of the Hagia Sophia and husband of Theodora, the greatest Byzantine Emperor.

ANSWER: **Justinian I** [or **Justinian the Great** or Flavius Petrus Sabbatius **Iustinianus**]

Ronald Reagan gave the “A Time for Choosing” speech in support of this presidential candidate and author of *The Conscience of a Conservative*. For 10 points each:

[10] Name this Republican Senator from Arizona who lost the 1964 presidential election.

ANSWER: Barry Morris **Goldwater**

[10] Barry Goldwater was defeated by this incumbent who succeeded John F. Kennedy and began the Great Society.

ANSWER: Lyndon Baines Johnson [or LBJ; prompt on "Johnson"]

4. Zagreus became an immortal after this figure rescued his heart and enclosed it in a gypsum figure. In another story, Erichthonius is born of Gaea as a result of Hephaestus failing to rape her. She received one of her more common epithets after a fight with Triton nearly kills her daughter. This goddess, sometimes called Pallas, adopted a role in which she aided Telemakhos and Odysseus as Mentor; in that work, she is commonly described as being “grey-eyed.” For 10 points, identify this Greek goddess of wisdom and war.

ANSWER: **Athena** [or **Athene**]

This hero allied with the Latins against the Rutuli, led by Turnus. For 10 points each:

[10] Name this figure who fled after the fall of Troy, arriving in Italy after a stay in Carthage. Dido killed herself after he left.

ANSWER: **Aeneas**

[10] This father of Aeneas was made lame by Zeus after he bragged about his affair with Aphrodite. Aeneas carried him from Troy on his back.

ANSWER: **Anchises**

5. This man drew on *Don Pasquale* for his comic opera *Don Procopio*, and his one-act *La guzla de l'émir* won him an invitation to compose a major work. Cathérine and Simon Glover are two characters in this man's *The Fair Maid of Perth*. Another of his works sees a high priest named Nourabad sentence to death two characters, Leila and Nadir, and features the duet “Au fond du Temple Saint.” In addition to *The Pearl Fishers*, this man wrote the music to an opera that features Escamillo, Don Jose, and the “Habanera.” For 10 points, name this French composer of *Carmen*.

ANSWER: Georges **Bizet**

In its opening, the town goldsmith Veit Pogner announces the Midsummer’s Day song contest. For 10 points each:

[10] Name this opera, in which the titular musical men, among them Walther von Stolzing, compete for Eva’s hand in marriage.

ANSWER: *The **Mastersingers of Nuremberg*** [or *Die **Meistersinger von Nürnberg***]

[10] *The Mastersingers of Nuremberg* is a rare comedy in the oeuvre of this composer’s works, which include *Parsifal* and *Lohengrin*, as well as the *Ring Cycle*.

ANSWER: Richard **Wagner**

6. In one of his plays, Polyphonte is a tyrant who wishes to marry the title widow of Cresphontes. In addition to *Merope*, this man created Cadore, who helps queen Astarte of Babylon escape with her lover, the Prime Minister. In another of his works, Paquette gives a venereal disease to the teacher of a man who is separated from his servant Cacambo after being expelled from Thunder ten Tronck. For 10 points, name this creator of *Zadig* as well as a novel about Dr. Pangloss entitled *Candide*.

ANSWER: **Voltaire** [or Francois-Marie **Arouet** de Voltaire]

He wrote about a boy, whose parents claim to have “two Shelleys” to Mr. Bons, which are actually poems framed as wedding gifts, in “The Celestial Omnibus.” For 10 points each:

[10] Name this author, who created Lucy Honeychurch, who travels to Florence where she changes rooms with the Emersons in this man’s *A Room With a View*.

ANSWER: Edward Morgan **Forster**

[10] In this work by Forster, Ronald Heaslop’s mother Mrs. Moore travels with Adela Quested, a woman who accuses Dr. Aziz of an attempted rape in the Marabar caves.

ANSWER: A **Passage to India**

7. Simeon Bekbulatovich held power during an interregnum in this man’s reign, and despite early successes such as the annexation of Astrakhan and Kazan, he led his country into the disastrous Livonian War. He sent the oprichniki after the entire city of Novgorod, one of several questionable decisions that led to the sack of Moscow in 1571, and his murder of his son Ivan Ivanovich left only the feeble-minded Fyodor as a legitimate heir. For 10 points, name this crazy Russian czar who earned his epithet for his random bouts of cruelty.

ANSWER: **Ivan the Terrible** [or **Ivan IV**; or **Ivan Grozny**; prompt on "Ivan"]

It was designed by Antoine Louis and first used on Nicolas Jacques Pelletier in 1792. For 10 points each:

[10] Name this device often used during the French Revolution for beheading a person.

ANSWER: **guillotine**

[10] Jean-Paul Marat was assassinated by this woman, who was executed with the guillotine. It is reported that her severed head “flared with indignation” after being slapped on the cheek.

ANSWER: Charlotte **Corday**

8. In one experiment, this molecule was used to show that type II-R pneumococci could become virulent; that experiment was conducted by Avery, MacLeod, and McCarty. This molecule’s semi-conservative replication was discovered in the Meselson-Stahl experiment. The strands of this molecule are generally known as the “sense” and “antisense” strands, and the Hershey-Chase experiment confirmed this molecule’s purpose. For 10 points, name this molecule that contains the information of the genetic code.

ANSWER: **DNA** [or **deoxyribonucleic acid**]

It is often used in the Kastle-Meyer blood test. For 10 points each:

[10] Name this indicator that turns colorless in acidic solutions and pink in basic ones, and is also often used in titrations.

ANSWER: **phenolphthalein**

[10] Hydrogen ions are formed from phenolphthalein when these ions are reacted with carbon dioxide. These ions also determine the potency of various bases.

ANSWER: **hydroxide** ions [or **OH minus** ions]



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Category Quiz
Bonus Choices

Arts
Current Events
Geography
History
Literature
Math Calculation
Mythology
Social Science

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Category Quiz Tossups

9. This instrument was played by the arranger of “La Plus Belle Africaine” and “Sophisticated Lady,” Harry Carney. The pianist Tommy Flannagan had a solo in “Strode Rode,” a song on the album named for this instrument’s “Colossus” by Sonny Rollins. One performer of this instrument released *Ornithology*, and it can come in tenor, baritone, alto, and soprano varieties. For 10 points, name this instrument performed by John Coltrane and Charlie Parker, a single reed woodwind made of metal.

ANSWER: saxophones

10. An associate of its namesake built a bone digester and conceived the idea of a piston and cylinder engine. That man, Denis Papin, inspired Thomas Savery to build a machine implementing this principle. It was also discovered by Edme Mariotte, and deviations from it are expressed as the compressibility factor. It is used to calculate changes in the two quantities it relates, which are related to temperature in Gay-Lussac and Charles’ Laws. For 10 points, name this law stating that pressure and volume of a gas in a closed system are inversely proportional.

ANSWER: Boyle’s Law

11. This river is joined by the Valserine at the town of Bellegarde, and it becomes fully navigable at Le Parc. The Genissiat Dam lies on this river, and the Durance, Isere and Saone are its main tributaries. With a delta beginning at Arles, this waterway flows through Avignon and Lyon, and it is the only major river that flows directly into the Mediterranean Sea. For 10 points, name this Alpine River of France and Switzerland that rises at its namesake glacier north of Geneva.

ANSWER: Rhone River

12. In this novel, Lord Steyne presents one character at court with the wife of the younger Sir Pitt, whose aunt Miss Crawley angrily cut her nephew out of her will before Rawdon left for a honeymoon in Brighton. Jos dies mysteriously in Aix-la-Chapelle, and his sister’s admirer Captain Dobbin convinces her fiancé to marry her before he is called off to fight at the battle of Waterloo. Involving the wife of George Osborn and a friend of Hers from Miss Pinkerton’s, for 10 points, name this “novel without a hero” about Amelia Sedley and Becky Sharpe, written by William Thackeray.

ANSWER: Vanity Fair

13. Opposition to this man included that of Muniz Tavares in the assembly, and he later defeated a rebellion by Joaquim do Amor Divino in Pernambuco. The husband of Amelie of Leuchtenberg and Maria Leopoldina of Austria, this man famously gave the “Cry of Ipiranga” with his sword unsheathed. Naming his daughter Maria da Gloria as heir resulted in rebels arriving on the *Belfast* to proclaim his brother Miguel king in Porto. The son of John VI of Portugal, for 10 points, name this first Emperor of Brazil.

ANSWER: Pedro I of Brazil [or Pedro IV of Portugal and the Algarves]

14. One player on this basketball team ruptured a triceps tendon after a freak golf cart accident. This team has recently acquired Rodney Carney, and its other bench players include Craig Smith and Rashad McCants. This team drafted, but then traded, O. J. Mayo, and notable players on this team include Mike Miller, Kevin Love, and Al Jefferson. This team's coach, Randy Wittman, was recently fired and replaced with Kevin McHale, who traded away Kevin Garnett. For 10 points, name this NBA team that plays home games in the Target Center in Minneapolis.

ANSWER: **Minnesota Timberwolves** [accept either]



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Category Quiz
Bonuses

Arts

He choreographed a ballet based on Debussy's *Prelude to the Afternoon of a Faun*, and was the first to dance the leading role in Stravinsky's *Petrouchka*. For 15 points, name this Russian dancer associated with Diaghilev's Ballets Russes.

ANSWER: Vaslav Nijinsky

Current Events

In 2007, this man imprisoned several lawyers and fired the Supreme Court justice Iftikar Chaudhury. For 15 points, identify this general who in 2008 was succeeded by Asif Zardari as the President of Pakistan.

ANSWER: Pervez Musharraf

Geography

A tributary of the Berezina called the Svislach River flows across this city, which is the headquarters of the Commonwealth of Independent States. For 15 points, name this capital of Belarus.

ANSWER: Minsk

History

This man survived an assassination attempt known as the Sakuradamon Incident and later gave the Jewel Voice Broadcast. For 15 points, name this son of Taisho and Emperor of Japan during World War Two.

ANSWER: Hirohito [or Emperor Shōwa]

Literature

This author of the story collection *Slow Learner* wrote about Oedipa Maas in *The Crying of Lot 49*. For 15 points, name this postmodern American author who wrote about Tyrone Slothrop and V-2 rockets in *Gravity's Rainbow*.

ANSWER: Thomas Pynchon

Math Calculation

Six people want to sit around a circular table, and Seth and Selene want to sit next to each other. For 15 points, keeping in mind that each place at the table is indistinguishable, how many unique seating arrangements are possible?

ANSWER: 48 [4!*2]

Mythology

He killed the monstrous Echidna and avenged Apis, but he is more famous for having a large number of eyes. For 15 points, identify this guard of Io, set by Hera, and killed by Hermes only for his eyes to subsequently adorn the peacock.

ANSWER: Argus Panoptes

Social Science

For 15 points, Iain Macleod coined what term for a period of slow or nonexistent economic growth, accompanied by a rise in prices, as seen in the U.S. during the 1970's?

ANSWER: stagflation



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Stretch Phase

15. The most reliable information on him is in Philemon 24, in which he is mentioned as sending his greetings from Rome to the Christians of Colossae. His leaving Perga caused Paul and Barnabas to split up, the latter traveling with this man to Cyprus. He is said to be the founder of the Church in Egypt, and he is the patron saint of Venice. Papias claimed that this man was Peter's secretary, and his book is the earliest Gospel and the primary source for information on the ministry of Jesus. For 10 points, name this traditional author of the Gospel that comes between Luke and Matthew.

ANSWER: **Mark**

The narrator of this poem contrasts his own mortality with the immortality of the song of the titular creature, which is described as a "light-winged Dryad of the trees." For 10 points each:

[10] Name this 1819 poem whose seventh stanza begins "Thou wast not born for death, immortal Bird!"

ANSWER: "**Ode to a Nightingale**"

[10] The poems "On First Looking into Chapman's Homer" and "La Belle Dame Sans Merci" were written by this English poet, who also wrote "Ode to a Nightingale."

ANSWER: John **Keats**

[10] Based on a work by Alain Chartier, this Keats poem details a knight who becomes enthralled with the titular woman even though the "sedge has wither'd from the lake."

ANSWER: "La **Belle Dame sans Merci**"

16. This polity broke off relations with one country after an incident at Mers-el-Kebir, and the Winter Velodrome was packed with prisoners from the Vel'd'hiv raid carried out by its police. It set up office at Sigmaringen and repealed the Marchandreau Act, and earlier opened the camp of Natzweiler. Its namesake 80 boarded the *Massilia* and was disenfranchised by Pierre Laval. For 10 points, name this puppet state formed in 1940 after Nazi Germany's victory over its western neighbor, led by Marshal Pétain.

ANSWER: **Vichy** France

This playwright described the aftermath of the twelve labors in his *The Children of Herakles*. For 10 points each:

[10] Name this author of *Alcestis* and *Elektra*, who wrote of the death of Jason's children in his *Medea*.

ANSWER: **Euripides**

[10] Dionysus and some amphibians who chant "brekekekex-koax-koax" judge a writing contest in Hades, which Euripides loses, in this Greek comedy.

ANSWER: *The **Frogs*** [or ***Batrachoi***]

[10] *The Frogs*, like *The Clouds*, *The Knights*, and *Lysistrata*, was written by this author of eleven fully extant Greek Old Comedy plays.

ANSWER: **Aristophanes**

17. In one of his works, Owen Warland builds a butterfly that is destroyed by Annie's son, and in another story, the narrator take a train to the Celestial City that is driven by Apollyon. The latter story is collected along with "Wakefield" and "The Minister's Black Veil" in *Twice Told Tales*. One work by this man is narrated by Miles Coverdale and is based on an experience at Brook Farm. For 10 points, name this author of *The Blithedale Romance* who also wrote about the adultery of Hester Prynne in *The Scarlet Letter*.

ANSWER: Nathaniel **Hawthorne**

Name these pharaohs, for 10 points each.

[10] This young king undid the Amarna Revolution of his predecessor Akhenaton, and his nearly intact tomb was discovered by Howard Carter in 1922.

ANSWER: **Tutankhamun** [or **Tutankaten**]

[10] The Mitanni and Sudan were conquered by this ruler of the fifteenth century BCE, who won at Meggido and built Cleopatra's Needles.

ANSWER: **Thutmose III** [prompt on **Thutmose**]

[10] In alliance with Senenmut, this mother and regent of Thutmose III ruled for fifteen years as the only female pharaoh.

ANSWER: **Hatshepsut**

18. He painted a soldier on a bucking white horse that has a leopard skin and head underneath its saddle in *An Officer of the Imperial Horse Guards Charging*, and his works includes portraits of a woman who obsessively gambles and a kleptomaniac. He painted four horses with all their legs in the air in *The Derby at Epsom*, and he painted a man standing on a barrel waving a red cloth while his companions writhe and fall into a stormy ocean after a shipwreck. For 10 points, name this painter of *The Raft of the Medusa*.

ANSWER: Jean Louis **Gericault**

It transports sperm from the testicles to the urethra. For 10 points each:

[10] Name this duct that is surgically sealed, tied off, or cut in a vasectomy.

ANSWER: **vas deferens** [or **ductus deferens**]

[10] In this sterilization technique for females, the uterus is removed.

ANSWER: **hysterectomy**

[10] Another type of female sterilization, tubal ligation, requires a very small incision, and can be preformed with this fiber-optic instrument that is associated with minimally invasive surgery.

ANSWER: **laparoscope**

19. In this war, an advance guard under Joseph Wheeler engaged the enemy at Las Guasimas, and the largest force in this war was commanded by William Shafter, whose weight and gout forced him to observe the battle of El Caney from a distance. An engagement at Siboney eventually led to a battle at Kettle Hill, which led to the capture of Santiago. For 10 points, name this "splendid little war" with engagements at Guam, the Philippines, and Cuba that launched the career of Teddy Roosevelt, and was incited by the sinking of the *USS Maine* in Havana Harbor in 1898.

ANSWER: **Spanish American War**

The title figure is blown toward the shore by Zephyr as a woman in a dress prepares to throw a robe over her. For 10 points each:

[10] Name this painting in which the nude Roman goddess of love is blown towards shore on a shell.

ANSWER: The **Birth of Venus**

[10] This 15th century disciple of Savonarola and painter of an *Adoration of the Magi* and *The Mystical Nativity* painted *The Birth of Venus*.

ANSWER: Sandro **Botticelli** [or Alessandro di Mariano di Vanni **Filipepi**]

[10] This “sacred” counterpart to *The Birth of Venus* shows Venus in an orange grove flanked by dancing Graces and the goddess Flora.

ANSWER: **Primavera**

20. The Lotus effect represents the adaptation of this structure to extreme moisture, and arums often contain spathes, which are large bracts, which are a modified form of these. Floccose and bearded are two words commonly used to describe their trichomes, or their “hairs”. Directly below their adaxial epidermis lies the series of cylindrical cells known as the palisade layer, and in angiosperms, they come with lamina and petioles. Analogous to the frond of the fern, for 10 points, name this plant organ which also has guard cells and stomata, the site of photosynthesis.

ANSWER: **leaf** [or **leaves**]

He died four days after being appointed to the United States Supreme Court by President Grant. For 10 points each:

[10] Name this man who served as secretary of war under Lincoln from 1862 and also served under Lincoln’s successor before being fired.

ANSWER: Edwin **Stanton**

[10] This president’s firing of Edwin Stanton enraged congressional Republicans, who claimed that this president violated the Tenure of Office Act.

ANSWER: Andrew **Johnson**

[10] The Tenure of Office Act was ruled unconstitutional in the Supreme Court case *Myers v. United States*, whose majority opinion was written by this former U.S. President.

ANSWER: William Howard **Taft**

21. Much of the action of this novel takes place in Barton Park at a cottage owned by John Middleton. One character is engaged to Lucy Steele, who leaves him for his wealthier brother Robert. After the dastardly actions of John Willoughby, one sister in this novel marries the old but kind Colonel Brandon and another marries Edward Ferrars. For 10 points, name this novel in which Marianne and Elinor Dashwood represent to two title qualities, a work of Jane Austen.

ANSWER: **Sense and Sensibility**

It has SI units of kilogram meter squared per second cubed per ampere square. For 10 points each:

[10] Identify this unit that is named for a German and is symbolized omega.

ANSWER: **ohm**

[10] Ohm is the unit of this physical quantity, which increases with increasing length and temperature, and decreases with increasing area of cross section.

ANSWER: **resistance**

[10] This generalized form of resistance, symbolized Z, has an imaginary part dependent on the reactance.

ANSWER: **impedance**

22. The Cornu spiral is used in certain integrals to approximate this effect, and resolution in this phenomenon is determined by the Rayleigh criterion. When the aperture size squared over wavelength times distance, also called the Fresnel number, is much less than one, a form predominates named for Fraunhofer. An equation relating spacing to wavelength and a pair of angles governs its namesake gratings. For 10 points, identify this phenomenon in which light bends around obstacles and spreads out at apertures.

ANSWER: **diffraction**

His sons Nada and Abidjan were struck down for unlawfully burning incense on the day of this man's anointing. For 10 points each:

[10] Name this first High Priest of the people of Israel, and the creator of the Golden Calf.

ANSWER: **Aaron** [or **Haroun**]

[10] Aaron's more famous brother was this man, who grew up in the Egyptian court and eventually led the Israelites out of Egypt in the Exodus.

ANSWER: **Moses** [or **Moshe**; or **Moshes**; or **Moyses**; or **Moseh**; or **Musa**; or **Musse**]

[10] This other son of Aaron was anointed to become the second High Priest on Mount Hor, and counted the dead priests after the Korah Rebellion.

ANSWER: **Eleazar** [or **Elazar**]