



High School Academic Pyramid Questions

2008-2009
ACF-Format Set #3

Round 11

Tossups

1. Its final book contains a description of the afterlife known as the myth of Er, while its second book introduces an invisibility-granting ring discovered by Gyges of Lydia. More philosophically significant are its division of human understanding into (*) eikasia, pistis, dianoia, and noesis in the Image of the Line and an allegory in which a group of men know nothing of outside reality apart from shadows on a cave wall. Advancing the philosopher-king as the greatest of rulers, for 10 points, name this Platonic dialogue about the ideal form of government.

ANSWER: the Republic [or Plato's Republic]

2. In one play, this character admonishes her lover for mispronouncing the name of Ftatateeta and comes to her lover in the guise of fragile pigeon's eggs. One of this woman's affairs features in John Dryden's *All for Love*. Priests bless this character "when she is (*) riggish," and vilest things "become themselves in her" according to a speech by Enobarbus about how "Age cannot wither her, nor custom stale / her infinite variety." She commits suicide along with Iras and Charmion. For 10 points, name this woman paired with Caesar by Shaw and with Antony by Shakespeare.

ANSWER: Cleopatra VII Philopator

3. This group, which grew out of the KOR, was officially recognized in the Social Accords. When it later ran in elections, its candidates promoted the "shock therapy" doctrine. Spurred by rampant inflation and the firing of an activist crane driver, this group formed under the leadership of an (*) electrician at the Lenin shipyard and was targeted in a declaration of martial law by Wojciech Jaruzelski. For 10 points, name this independent trade union led by Lech Walesa that opposed the Communist government of Poland in the 1980s.

ANSWER: Solidarity [or Solidarność]

4. A man who resembles the fictitious poet Bob McCorkle pursues Christopher Chubb in a novel set in this country, *My Life as a Fake*. Another novel set in this country details the relationship between Laura Trevelyan and the German explorer Voss. An author from this country told of a (*) Nazi who saves Jews from the Holocaust in *Schindler's Ark*. This home of the authors Peter Carey, Patrick White, and Thomas Keneally is the setting of a poem about a "swagman camped in the billabongs." For 10 points, name this literary home of "Waltzing Matilda."

ANSWER: Australia

5. One of his symphonies opens with the hymn "Veni Sancte Spiritus" and ends with the Holy Anchorites scene from *Faust*. His C-sharp minor fifth symphony opens with a "Funeral March" and contains an F major "Adagietto." His sixth symphony had three hammer blows, while his first included a movement that opened with a minor setting of (*) *Frère Jacques*. He composed a work based on *The Chinese Flute* entitled *The Song of the Earth*. For 10 points, name this composer of the *Titan* and *Resurrection* symphonies, as well as the *Symphony of a Thousand*.

ANSWER: Gustav Mahler

6. One of these beings uses trial and error to discover that the most comfortable bum-wipe is the neck of a goose and defeats the upstart King of Lerne, Picrochole. Another of these beings journeys to the Oracle of the Holy Bottle with his friend (*) Panurge. The older of them climbs the church of Notre Dame and drenches a crowd by urinating on them and is the son of Grangousier and Garamelle. For 10 points, name these beings exemplified by Gargantua and Pantagruel, who are quite tall.

ANSWER: giants [or Gargantua and Pantagruel before mention]

7. Frequency shifts produced by this analytical technique are identical to those produced in Raman spectroscopy. It can be modified using a Michelson interferometer to take advantage of Fourier transforms. This technique measures the net change in dipole moment that is produced when different frequencies of radiation generate (*) molecule rotations and vibrations. The spectra produced by this technique have a species-specific fingerprint region. For 10 points, name this spectroscopic technique that uses wavelengths directly below visible light to analyze compounds.

ANSWER: IR spectroscopy [or infrared spectroscopy]

8. One character on this show appears on Hardball after she is misquoted in Maxim magazine, and that character appears in the independent film *The Rural Juror*. Another character on this show has his entourage of Griz and Dot Com joined by the page (*) Kenneth for one episode. This show opens when Jenna Maroney is joined on the cast of *The Girlie Show* by Tracy Jordan after Jack Donaghy is promoted at NBC. For 10 points, name this show that stars Tina Fey as Liz Lemon, the head writer of a comedy show.

ANSWER: 30 Rock

9. This figure gave Hriedmar a cursed golden ring that he took from Andvari after accidentally killing Otr. He took the guise of a servant to accompany the cross-dressed Thor on a mission to reclaim Mjolnir, and at a feast hosted by Aegir, he insulted all of the gods and fled in the form of a salmon. A (*) bowl is held over his head by his wife Sigyn to catch the venom that drips into his face as punishment for causing Hoder to kill Balder, and at Ragnarok he will be killed by Heimdall. For 10 points, name this father of Hel and the Midgard serpent, a Norse trickster god.

ANSWER: Loki

10. Infinitive verbs in this language end in “mek” and, like in Japanese, can have double causative forms. This language demonstrates both labial and palatal vowel harmony. It is found in the southwestern or “Oğuz” branch of its language subfamily, alongside such closely related languages as Gagauz. A member of the (*) Altaic family, this language was written in Arabic letters until 1928, when it was officially Romanized. For 10 points, name this language that was introduced to Anatolia by the Seljuks and is now spoken in Istanbul and Ankara.

ANSWER: Turkish [or Türkçe]

11. The Peace of Westphalia forced this country to give up Alsace. The influence of Alexander von Bach waned after this nation lost the battles of Magenta and Solferino to Napoleon III, and the Christian leader at Lepanto was known as Don Juan of this nation. Kurt (*) Schuschnigg succeeded an assassinated ruler of this nation. The death of Engelbert Dolfuss allowed this nation to violate the treaty of St. Germain and participate in the Anschluss with Germany. For 10 points, name this country, once ruled by Hapsburgs like Joseph II.

ANSWER: Austria [or Osterreich]

12. The lower right portion of this artist's painting *Ovid among the Scythians* depicts the milking of a dark mare. Virgil leads the title figure across the Acheron in his *The Barque of Dante*. The title figure of another painting by this artist reclines on a bed and orders officers to cut the throats of various horses and women. In addition to *The (*) Death of Sardanapalus*, this artist painted a work that includes a boy wielding two pistols and a bare-breasted female carrying a musket and the French flag. For 10 points, name this artist of *Liberty Leading the People*.

ANSWER: Eugène Delacroix

13. This scientist discussed the role earthworms play in the formation of vegetable mold, and another of his works dealt with the similarities in emotional expression between man and animals. He considered the secondary sexual characteristics of humans in his *Descent of (*) Man*. While working in the Malay Archipelago, Alfred Wallace independently developed a theory this scientist formulated while serving as naturalist aboard the HMS *Beagle*. For 10 points, name this scientist who proposed a theory of evolution by natural selection in his *The Origin of Species*.

ANSWER: Charles Robert Darwin

14. The narrator of this poem implores the title character to “rise up” because “bouquets and ribbon’d wreaths” and the “shores a-crowding” are done in his honor. He implores the title character to “rise up and hear the bells,” but that request is ignored because although “the ship has weather’d every rack, and the prize we (*) sought is won,” the title character “has no pulse nor will.” For 10 points, name this poem that puts the accomplishments of Abraham Lincoln in nautical terms, an elegy by Walt Whitman with two exclamation points in the title.

ANSWER: “O Captain! My Captain!”

15. This man exiled himself to Cilicia after being ordered to divorce Cornelia, the daughter of Lucius Cinna. This man created an army to fight Mithridates IV Eupator of Pontus. He attacked Gerovia and was soundly repulsed and then besieged Alesia, where he defeated the rebellion of (*) Vercingetorix. This decisive victor at Pharsalus also wrote a history of the Gallic Wars and destroyed his fellow triumvirs Crassus and Pompey after crossing the Rubicon. For 10 points, name this Roman who claimed “Veni, vedi, vici” and was murdered by Brutus.

ANSWER: Gaius Julius Caesar

16. The name of this nation was coined by Choudhary Ali, and the idea for it was originated by the author of *The Secrets of the Self* and *The Call of the Marching Bell*, Muhammad Iqbal. At the behest of A.K. Fazlul Huq and Sikandar Khan, the Lahore Resolution was put forth which eventually resulted in the appointment of (*) Muhammad Jinnah as its leader. It has been recently ruled by Nawaz Sharif, Pervez Musharraf, and Benazhir Bhutto. For 10 points, name this Asian nation that fought several wars over Kashmir with its eastern neighbor, India.

ANSWER: Islamic Republic of Pakistan

17. The Laplace transform of this function is equal to s over the quantity s squared plus one. Its Taylor series expansion is represented by the sum as n goes from zero to infinity of negative one to the n times x to the two n over quantity two n factorial. The hyperbolic version of this function is equal to the quantity (*) e to the x minus e to the negative x , all over two. A generalization of the Pythagorean theorem is known as the “law of” this function. For 10 points, name this reciprocal of the secant function, a trigonometric function often represented as adjacent over hypotenuse.

ANSWER: cosine

18. The southernmost point of this province is part of Point Pelee National Park, and the large Polar Bear Park is located along its northern coastline. This province's largest island is Manitoulin, which is also the world's largest island within a body of fresh water, and this lake-filled province is also home to one of the world's largest freshwater ports in (*) Thunder Bay. It is also the location of major border towns such as Sault Sainte Marie and Windsor, as well as the national capital of Ottawa. For 10 points, identify this most populous Canadian province with capital at Toronto.

ANSWER: Ontario [prompt on Canada before "province's"]

19. Vector models of this phenomenon include one based on the surface equivalence principle, and its propagation can be modeled by applying Green's theorem to the Helmholtz wave equation. Scalar theories of this phenomenon include Rayleigh-Sommerfeld theory, and its (*) Fraunhofer variety occurs for Fresnel numbers significantly less than one. Its occurrence for X-rays passing through a crystal structure is given by Bragg's law in X-ray crystallography. For 10 points, name this phenomenon that occurs when the wavefronts of propagating waves bend around obstacles.

ANSWER: diffraction

20. A James Moody flute solo opens this man's "Kush," which appears on *Swing Low, Sweet Cadillac*, and he got together Sonny Stitt and Sonny Rollins to record *Sonny Side Up*. The composer of "Con Alma" and "Groovin' High," he helped create Afro-Cuban jazz with songs like "Manteca," and he also wrote (*) "Salt Peanuts" and "A Night in Tunisia." One of the pioneers of bebop, he's famous for collaborating with Stan Getz and, earlier, Charlie Parker. For 10 points, name this jazz musician known for an iconic bent trumpet.

ANSWER: John Birks "Dizzy" Gillespie

21. Members of this state won the Grass Fight during the successful siege of Bexar. This state's bloodiest Indian war ended with Buffalo Hump's loss at the Battle of Plum Creek. The burning of Vince's Bridge by Deaf Smith in this state began a battle that avenged those massacred in this state at (*) Goliad. It was led by politicians like Mirabeau Lamar and Stephen F. Austin. For 10 points, name this state that won its independence from Mexico at the Battle of San Jacinto and was subsequently governed by Sam Houston.

ANSWER: Texas

22. In one of this author's plays, Citizen Barlow repents for his sins by going to the City of Bones with Aunt Esther. In addition to *Gem of the Ocean*, this author described the conflict between the trumpeter Levee and the title blues singer in his play set in a Chicago recording studio, (*) *Ma Rainey's Black Bottom*. Most of his plays are set in the Hill District, including one in which Cory is prevented from playing football by his adulterous father, the truck driver Troy Maxson. For 10 points, name this American playwright of *The Piano Lesson* and *Fences*.

ANSWER: August Wilson

23. It is the location of the globular cluster known as Mayall II and was also the source of a supernova observed by Ernst Hartwig in 1885. The largest of this object's fourteen known satellites was discovered by Le Gentil and is typically referred to as M32, although some scientists argue that it is also bound to the (*) Triangulum. Originally described as a "small cloud" by the Arab astronomer al-Sufi, this object was long mistaken for a nebula and included in the Messier catalogue as M31. The largest member of the Local Group, for 10 points, identify this big spiral galaxy.

ANSWER: Andromeda galaxy [or NGC224, accept M31 before mentioned]



HSAPQ

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Bonuses

1. Cesar Pelli designed this city's Two IFC, and it also contains the Norman Foster Works HSBC headquarters and Chek Lap Kok Airport. For 10 points each:

[10] Name this city, which also contains a stepped-back triangular glass tower with triangular trusses, the Bank of China Tower.

ANSWER: **Hong Kong**

[10] The Bank of China Tower was designed by this Chinese-American architect whose other works include the Louvre's glass pyramid and the Christian Science Center.

ANSWER: Ieoh Ming **Pei**

[10] This I.M. Pei building in Cleveland extends out over Lake Erie and features Pei's signature glass pyramids. It houses iconic memorabilia like Elvis Presley guitars.

ANSWER: the **Rock and Roll Hall of Fame**

2. A model of their action involves quasiparticles called rotons and was developed by Lev Landau. For 10 points each:

[10] Name this phenomenon in which a fluid loses all resistance to flow.

ANSWER: **superfluidity**

[10] Landau studied properties of superfluids in the 4 isotope of this element, the atoms of which have nuclei that are alpha particles.

ANSWER: **Helium** [or **He**]

[10] Helium-4 becomes a superfluid when cooled below this point. It gets its name because the graph of specific heat vs. temperature looks like the namesake Greek letter.

ANSWER: **lambda** point

3. Its tributaries include the Green and Gunnison rivers, and it flows past Glen Canyon Dam. For 10 points each:

[10] Name this river of the American Southwest that flows through the Grand Canyon and Hoover Dam.

ANSWER: **Colorado** River

[10] This Arizona river enters the Colorado near Yuma and is known for a namesake "monster," a type of lizard.

ANSWER: **Gila** River

[10] This saline lake in southern California was formed in the early twentieth century when the Colorado overflowed a dike in the Imperial Valley.

ANSWER: **Salton Sea**

4. The contact type is caused by the sudden intrusion of magma, and the regional type is generally associated with an increase in pressure across a large region. For 10 points each:

[10] Name this geologic process in which the structure or chemical composition of a rock is changed without completely melting the rock, for example, limestone turning into granite.

ANSWER: **metamorphism** [accept word forms]

[10] Regional metamorphism is typically associated with the process of mountain-building, which formally goes by this Greek term. Examples are the Alpine and Acadian ones.

ANSWER: **orogeny** [accept word forms]

[10] One variety of rock that undergoes metamorphism is this gray-colored mineral formed from shale. It is most useful for its ability to cleave into thin slabs.

ANSWER: **slate**

5. This president was advised by Colonel House and Joseph Tumulty. For 10 points each:

[10] Name this Democrat who defeated Charles Evans Hughes on the slogan “he kept us out of war” before entering the United States in World War I.

ANSWER: Thomas Woodrow **Wilson**

[10] This attorney general under Wilson responded to the 1919 Red Scare with a series of namesake raids on Socialist organizations.

ANSWER: Alexander Mitchell **Palmer**

[10] During the Red Scare, this future president declared “There is no right to strike against the public safety by anybody, anywhere, any time” in response to the Boston police strike.

ANSWER: Calvin **Coolidge**

6. Wilhelm zu Wied gave up attempting to govern this country after only six months in 1914. For 10 points each:

[10] Name this Balkan nation, which was led after World War II by Enver Hoxha.

ANSWER: Republic of **Albania** [accept Republika e **Shqipërisë**]

[10] This country, led by Benito Mussolini, invaded and took over Albania in 1939.

ANSWER: **Italy**

[10] Italy deposed this then-king of Albania, who had overthrown Bishop Fan Noli in 1925.

ANSWER: King **Zog I** [accept Ahmed Bey **Zogu**]

7. The narrator of this novel is unable to complete his thesis on Cass Mastern. For 10 points each:

[10] Name this novel about the rise and fall of Southern politician Willie Stark, based on Huey Long.

ANSWER: **All the King's Men**

[10] This author co-wrote *Understanding Poetry* with Cleanth Brooks in addition to writing *All the King's Men*.

ANSWER: Robert Penn **Warren**

[10] Warren was a member of the Fugitives along with this poet of “Ode to the Confederate Dead.”

ANSWER: Allen **Tate**

8. They are composed of a large and small subunit and three or four strands of a namesake RNA molecule. For 10 points:

[10] Name these structures that can be free floating or attached to the endoplasmic reticulum that are the site of protein synthesis from messenger RNA.

ANSWER: **ribosome**

[10] The amino acid sequence is assembled at this site on the ribosome, which is located adjacent to the A site where transfer RNA molecules bearing additional amino acids bind.

ANSWER: **P** site

[10] The amino acid sequence represents this basic structure of proteins that does not include conformational interactions such as hydrogen bonding and the formation of disulfide bridges.

ANSWER: **primary** structure

9. A controversial depiction of Lenin led to the destruction of his *Man at the Crossroads*. For 10 points each:

[10] Name this Mexican muralist, the husband of Frida Kahlo.

ANSWER: Diego **Rivera**

[10] *Man at the Crossroads* was intended for a building in this city, which is also home to the *Let Us Beat Swords into Plowshares* sculpture. This city was the site of the 1913 Armory Show.

ANSWER: **New York** City

[10] Often depicting the struggle between human and machine, this Mexican muralist created *The Epic of American Civilization*, which is located at Dartmouth College.

ANSWER: Jose Clemente **Orozco**

10. He was arrested on a false charge of treason in 1530, and he had earlier failed to persuade Clement VII to give Henry VIII a quick divorce. For 10 points each:

[10] Name this cardinal who ran foreign and domestic policy in the early years of Henry VIII's reign.

ANSWER: Cardinal Thomas **Wolsey**

[10] Wolsey failed to obtain a divorce for Henry from this first wife, the sister of Joanna the Mad.

ANSWER: **Catherine of Aragon**

[10] In 1520, Wolsey engineered this meeting between Henry VIII and Francis I of France at a namesake site near Calais named for the splendor of the nobles assembled there.

ANSWER: **Field of the Cloth of Gold**

11. This figure fought off an Amazon invasion of Lycia, where he was sent by Proetus in the hopes of killing him. For 10 points each:

[10] Name this hero who more famously used a golden bridle to tame Pegasus.

ANSWER: **Bellerophon**

[10] Bellerophon and Pegasus killed this monster, the offspring of Typhon and Echidna, which had the body of a goat, the head of a lion, and the tail of a serpent.

ANSWER: **Chimera**

[10] Although he was sometimes said to be a son of Poseidon, Bellerophon's mother was married to this king of Corinth who fed his horses human flesh until he was eaten by them at Pelias' funeral games.

ANSWER: **Glauco**

12. Name these psychologists who studied learning for 10 points each.

[10] This Russian demonstrated classical conditioning by making dogs salivate when he rang a bell.

ANSWER: Ivan Petrovich **Pavlov**

[10] This advertiser and author of "Psychology as a Behaviorist Views It" trained the infant "Little Albert" to fear all white furry objects.

ANSWER: John Broadus **Watson**

[10] This psychologist posited that everyone passes through "preconventional," "conventional," and "postconventional" phases in his model of moral development.

ANSWER: Lawrence **Kohlberg**

13. Name the following state governors for 10 points each.

[10] This man defeated leading challenger Cruz Bustamante and numerous others after Grey Davis was recalled to become governor of California. Oh, and he also played the Terminator.

ANSWER: Arnold **Schwarzenegger**

[10] She is the first female governor of Arizona to be re-elected to the position and was nominated by Barack Obama for the position of Secretary of Homeland Security.

ANSWER: Janet **Napolitano**

[10] This governor of Michigan made the news for portraying Sarah Palin to prepare Joe Biden for the vice-presidential debate.

ANSWER: Jennifer **Granholm**

14. Solid state examples include silver iodide and molten sodium chloride. For 10 points each:

[10] Name these substances that dissociate into positively and negatively charged ions in solution and are capable of conducting an electric current.

ANSWER: **electrolyte**

[10] Electrolytes present in this type of electrochemical cell spontaneously produce electrical energy because the standard cell potential is greater than zero.

ANSWER: **galvanic** cell [or **voltaic** cell]

[10] The presence of a salt bridge in a galvanic cell results in the formation of this type of potential that occurs due to the diffusion of ions across an interface.

ANSWER: liquid **junction** potential

15. This epic tells of the Hero Twins, Hunahpu and Xbalanque (zee-BOL-an-kay). For 10 points each:

[10] Name this sourcebook for most of Mayan mythology, translated into Spanish by Miguel Asturias.

ANSWER: the **Popul Vuh** [or **Council Book**; or **Book of the Community**; or **Popul Wu'uj**]

[10] This epic was translated into English by Richard Burton. It ends with the wedding of King Shahryar to its narrator, who leaves her stories unfinished to escape her death.

ANSWER: **Arabian Nights' Entertainments** [or **The Thousand and One Nights**]

[10] Epics from this continent include the Epic of Sundiata and the Mwindo epic, which were passed on orally by griots.

ANSWER: **Africa**

16. Fritz Kreisler wrote a concerto that he claimed was actually by Vivaldi in this note's major key. For 10 points each:

[10] Name this note that is positioned at the center of the alto clef. There is a notable "middle" one on the piano.

ANSWER: **C**

[10] This note is a perfect fourth above C or a perfect fifth below it. French horns are tuned to it, and it is a whole step above E-flat.

ANSWER: **F**

[10] This note, used as the tuning of trumpets and clarinets, is a whole step below C. When a key is in F major, it is the only note specifically noted by the key signature.

ANSWER: **B flat**

17. He wrote about Valentine Wannop, who becomes a pacifist during World War I. For 10 points each:

[10] Name the author of *Parade's End*, as well as a novel about Edward Ashburnham's affair with Florence Dowell titled *The Good Soldier*.

ANSWER: Ford Madox **Ford** [or Ford Hermann **Hueffer**; or Fenil **Haig**]

[10] Ford Madox Ford collaborated with this author on *The Inheritors*. This author wrote *Almayer's Folly* about a Dutch trader in Malaya and penned *Lord Jim*.

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

[10] Conrad wrote this novel in which one character writes "Exterminate all the Brutes." This novel is about Marlow's journey up the Congo to visit the trader Kurtz.

ANSWER: ***Heart of Darkness***

18. For 10 points each, name these twentieth-century leaders of Spain.

[10] This man originally claimed he would step down in ninety days after leading a 1923 coup but ruled as military dictator until 1930. His son Jose Antonio founded the Falange.

ANSWER: Miguel **Primo de Rivera** [prompt on partial last name]

[10] This fascist and head of the Falange after Jose Antonio Primo de Rivera's death consolidated power after the Spanish Civil War and led the country until 1975.

ANSWER: Francisco **Franco**

[10] Franco announced in 1969 that this grandson of Alfonso XIII would succeed him. He is the current king of Spain.

ANSWER: **Juan Carlos I** [do not accept or prompt on "Juan Carlos II"]

19. The nameless protagonist of this work disappears with a camera and never heard of again. For 10 points each:

[10] Name this work in which the Eloi and Morlocks are encountered on the future Earth.

ANSWER: *The **Time Machine***

[10] *The Time Machine* is a work of this proto-science-fiction author of *The Island of Doctor Moreau* and *The War of the Worlds*.

ANSWER: Herbert George **Wells** [or H.G. **Wells**]

[10] Another time-travel novel is this one, in which Julian West falls asleep and wakes up in the year 2000. This novel by Edward Bellamy inspired many collective utopian communities.

ANSWER: ***Looking Backward: 2000-1897***

20. Identify these women from the Bible for 10 points each.

[10] She was turned into a pillar of salt when she turned around to view the destruction of Sodom and Gomorrah. She is never mentioned by name, as she is referred to in relation to her husband.

ANSWER: **Lot's wife**

[10] This wife of Abraham gave birth to Isaac, from whom it is said the Jews are descended.

ANSWER: **Sarah**

[10] Mentioned in Genesis, this Egyptian maid of Sarah gave birth to Ishmael, another of Abraham's children.

ANSWER: **Hagar**

21. This character is featured in a geste that is attributed to Turolodus, and after his death, his betrothed Aude dies. For 10 points each:

[10] Name this paladin of Charlemagne who blows the horn Oliphant after an attack at Roncevaux pass. He is betrayed by Ganelon and wields the sword Durendal.

ANSWER: **Roland** [accept **Orlando**]

[10] This author wrote about Roland in a work that is a sequel to Matteo Boiardo's *Orlando Immorato*, *Orlando Furioso*, in which the Princess of Cathay Angelica drives Orlando insane.

ANSWER: Ludovico **Ariosto**

[10] In *Orlando Furioso*, the Englishman Astolpho rides a hippogriff to this location, where the "sense of poets" is kept. He finds Orlando's lost sanity in a vial here.

ANSWER: the **moon**

22. They are upheld by electron degeneracy pressure, and their faint glow derives from the radiation of internal heat. For 10 points each:

[10] Identify these small super-dense stars that are a late stage in the development of sun-sized stars. Nearby examples include 40 Eridani B and Sirius B.

ANSWER: **white dwarfs**

[10] White dwarfs are found along a band in the lower-left of this ubiquitous diagram, which plots the luminosity of stars against their temperature.

ANSWER: **Hertzsprung-Russell** diagram [or **HR** diagram]

[10] The maximum mass for a white dwarf is around this limit equal to one point four solar masses, beyond which the star's gravity overcomes electron degeneracy pressure.

ANSWER: **Chandrasekhar** limit

23. The invasion that it stopped was supposedly meant as a response to the Athenian intervention in the revolt of the Ionians under Aristagoras. For 10 points each:

[10] Name this 490 BCE battle in which Darius the Great's army under Artaphernes was defeated, prompting a run by Pheidippides.

ANSWER: Battle of **Marathon**

[10] The victory at Marathon is generally credited to this strategoi. Ironically, he had earlier served under Darius while tyrant of Thracian Chersonese.

ANSWER: **Miltiades** the Younger

[10] Another cause of the attempted Persian invasion was the desire to restore this son of Peisistratus as tyrant of Athens. He had been expelled in 510 BCE.

ANSWER: **Hippias**