Collegiate Written by Ewan MacAulay, Grant Boggess, Austin Brownlow, Michael Chuber, Alex Dzurick, Joey
 Novice 4 Goldman, Nicholas Karas, Melanie Keating, Paul Kelson, Benjamin Johnson, Grace Liu, Brian
 Fall 2013 Mongilio, Itamar Naveh-Benjamin, Robert Pond, Victor Prieto, Jacob Reed, Graham Reid, Jihye Shin,
 Packet 6 Jonathan Tong Xu, Eric Xu, and Haohang Xu. Edited by Andrew Hart.

1. According to Howard Becker's work on labeling theory, this phenomenon causes labeling that stands for cultural outrage. Travis Hirschi formulated the "self-control theory" of this phenomenon. Cesare Lombroso's anthropological studies led him to conclude a biological basis for this phenomenon. Merton's strain theory posits that anomie might lead a person to pursue this activity, which at law typically has the elements of actus reus and mens rea. For 10 points, name this kind of deviance, which violates prescribed law and is subject to prosecution.

ANSWER: crime [accept word forms like criminal activity or criminal deviance; accept deviance until

ANSWER: <u>crime</u> [accept word forms like <u>criminal activity</u> or <u>criminal deviance</u>; accept <u>deviance</u> until mentioned]

2. This work, which compares fortune to a flooding river, stresses that fortune is the opposite of prowess. In chapter 19 of this work, Septimius Severus is said to emulate both a lion and a fox. This book, which distinguishes between hereditary and ecclesiastical principalities, was a follow-up to its author's earlier *Discourses on Livy*, which described the ideal republic. This book, which is dedicated to Lorenzo de' Medici, claims that it is better for a ruler to be feared than to be loved. For 10 points, name this political treatise by Niccolo Machiavelli.

ANSWER: *The Prince* [or *Il Principe*]

3. In this religion's cosmology, the universe is wide at the top and the bottom and narrow in the middle, just like a human body. This religion's legendary founder was born at the end of the third epoch of a descending time cycle and lived for about 593 quintillion years. That man, Rishabha, was the first of the 24 of this religion's "ford-bearers," the last of whom was Mahavira. For 10 points, name the Indian religion whose "sky-clad" monks do not wear clothing and whose followers practice a very strict form of non-violence called *ahimsa*.

ANSWER: **Jain**ism

- 4. In a poem by this author, the speaker offers his lover "silver dishes for thy meat" and "buckles of the finest gold." Cornelius and Valdes advertise "magic and the concealed arts" in one of his plays, whose title character summons Helen of Troy. This author created a villain who is assisted by Ithamore, murders his Christian daughter, and is thrown into a cauldron. This author asked a maiden to "come live with me and be my Love" in "The Passionate Shepherd to His Love." For 10 points, name this author of the plays *Doctor Faustus* and *The Jew of Malta*. ANSWER: Christopher <u>Marlowe</u>
- 5. This work's manuscript ends with the phrase Soli deo Gloria, after the composer completed the work in less than a month with a libretto by Charles Jennens. This work's fourth scene contains a pifa, or a pastoral symphony, before the "Annunciation to the Shepherds." Songs from this work include "The trumpet shall sound" and "I know that my Redeemer liveth," as well as a section that George II apocryphally stood at the sound of. For 10 points, name this oratorio by Georg Friedrich Handel about the life of Jesus Christ, typically performed around Christmas.

6. This god, disguised as Bolverk, worked a summer for Baugi and seduced Gunnlod in order to steal the Mead of Poetry from Suttung. In his quest for wisdom, this god hung from Yggdrasil for nine days and traded one of his eyes for a drink from the Well of Mimir. This god owns the ravens Hugin and Munin and his spear Gungnir never misses its target. At Ragnarok, the wolf Fenrir will kill this leader of the Aesir. For 10 points, name this husband of Frigga, the chief god of Norse mythology.

ANSWER: Odin

ANSWER: Messiah

7. This president vetoed the Rivers and Harbors Bill. This man's Secretary of the Treasury, Robert Walker, devised a tariff that helped repair relations with Great Britain after a border dispute in the Oregon territory. This Democratic governor of Tennessee, who defeated Henry Clay in a presidential election, later sent Nicholas Trist to negotiate the Treaty of Guadelupe-Hidalgo, giving the U.S. control over California and Texas. For 10 points, name this president who succeeded John Tyler in 1845 and oversaw the Mexican-American War.

ANSWER: James Knox Polk

- 8. One of this author's characters, according to Gavin Stevens, has a vocabulary of two words: "No" and "Foreclose." That character from Frenchman's Bend was created by this author, who wrote a novel in which Lena Grove searches for her baby's father. This author created a character who loves a golf course because it reminds him of his sister Caddy in a novel he wrote that is partially narrated by Benjy and his Harvard-educated brother, Quentin Compson. For 10 points, name this Southern Gothic author of *Light in August* and *The Sound and the Fury*. ANSWER: William [Cuthbert] Faulkner
- 9. This equation can be used with a Venturi device to measure flow rate. One term in this equation accounts for the gravitational potential energy of a fluid. This equation, which ignores internal friction and compressibility, holds true because of the work-energy principle. This equation's namesake also names a related effect in which pressure is reduced as flow rate increases. It can be used to calculate the dynamic lift experienced by an object like an airplane wing. For 10 points, name this fluid-flow equation formulated by a Swiss physicist.

ANSWER: Bernoulli equation

10. A shipwreck at Ponthieu two years before this battle led to one of the shipwrecked men swearing an oath to the eventual victor of this battle. The commander of the losing army in this battle at Senlac Hill was struck by an arrow in the eye, as depicted on the Bayeux Tapestry. The losing commander of this battle, who earlier defeated Norwegian invaders at the battle of Stamford Bridge, was Harold Godwinson. For 10 points, name this 1066 victory of William the Conqueror over the Saxons, establishing the Normans as the rulers of England.

ANSWER: Battle of **Hastings**

11. This biome, which is the most common site of "drunken trees," comes in a "sparse" variant where the ground is dominated by lichen. The dominant tree genera in this biome include *Picea* and *Pinus*, which both display the conical shape and needle leaves common in this biome. The limit of this biome is where shallow permafrost prevents wooded vegetation from growing. The tree line marks the end of this biome and the start of tundra. For 10 points, name this largest terrestrial biome, also known as boreal forest, which comprises the American Northwoods.

ANSWER: taiga [or boreal forest before read; prompt on Northwoods before read]

12. In this actual opera, the fictional opera *The Vain Precaution* is sung in a scene in which the female lead pretends to receive music lessons from a character disguised as Dr. Alonso. The disguised character is actually a supposedly poor student named Lindoro, who gets help from this opera's title character. The celebrated baritone aria "Largo al factotum" proclaims the importance of this opera's title character, who helps the disguised Count Almaviva marry Rosina. For 10 points, Figaro is the title character of what Giacomo Rossini opera?

ANSWER: The **Barber of Seville** [or Il **barbiere di Siviglia**]

13. The main character of one work written in this language is forced to "spend a long, long year of absence from his bride" in mountaintop exile. Another work in this language describes Radha's jealousy regarding her divine lover's licentiousness. This language, in which "The Cloud Messenger" and "Gita Govinda" were written, was used to write a poem in which the Kauravas fight against the five Pandava brothers and Krishna. For 10 points, the *Mahabharata* and *Ramayana* were originally composed in what ancient language of the Indian subcontinent?

ANSWER: Sanskrit [or samskrtam; or samskrta]

- 14. This country was where an image of the "woman in red" being sprayed by a policeman originated. Unrest in this country was blamed on the Jewish Diaspora and foreign agents by Deputy Prime Minister Besir Atalay. In June 2013, the Prime Minister of this country called protesters "a few looters." Those protestors were angered by a construction plan in Taksim Gezi Park in this country in late May 2013. For 10 points, name this country where protestors demonstrated against the government of Prime Minister Recep Erdogan in Istanbul.

 ANSWER: [Republic of] **Turkey** [or **Türkiye** Cumhuriyeti]
- 15. This artist created a work whose realistic quality caused him to say, "Speak, damn you!" An early work created by this artist was a depiction of the Feast of Herod for the baptistry of the Siena Cathedral. This sculptor of *Zuccone* created a monument in Padua to Erasmo da Narni, his equestrian statue *Gattamelata*. A work by this man is a feminized portrayal of a Biblical hero who leans on his sword while standing over the head of his enemy. For 10 points, name this Florentine sculptor whose works include a bronze *David*.

ANSWER: **Donatello** [or Donato di Niccolò di Betto **Bardi**]

16. While serving as president, this man set for constitutional reforms with the Siete Leyes, or Sevel Laws. With David Burnet, this man signed the Treaties of Velasco. This man, who ordered the execution of James Fannin's company of 300 men in the Goliad massacre, commanded an assault on a building that contained Jim Bowie, Davy Crockett, and 186 men, all of whom died in the ensuing battle. For 10 points, name this Mexican general and president who lost the Battle of San Jacinto and crushed the Texan defenders of the Alamo.

ANSWER: Antonio [Padua María Severino] Lopez de Santa Anna [y Pérez de Lebrón]

17. Inside the body, this quantity is tightly maintained by the enzyme carbonic anhydrase. For solutions that are not dilute and aqueous, this quantity may be replaced by the Hammett function. Soren Sorenson introduced this quantity, which is equal to the base-ten logarithm of conjugate base over conjugate acid plus pKa by the Henderson-Hasselbalch equation. Phenolphthalein turns pink when this quantity reaches about nine. For 10 points, name this quantity that measures the acidity of a solution on a namesake logarithmic scale.

ANSWER: **pH** [accept **acidity** before "Sorenson" and prompt on it thereafter]

18. The inhabitants of this country nail a Cossack to a Ukrainian tree in Gogol's *Taras Bulba*. A Spanish play set in this country depicts a prince, Segismundo, who is locked in a tower and declares that "all of life is but a dream." In *The Age of Innocence*, Ellen tries to divorce a nobleman from this country. An author born in this country wrote an novel about a sailor who abandoned the *Patna*. Another novelist from this country chronicled the love between Ligia and Marcus Vincius in *Quo Vadis*. For 10 points, name this birth country of Joseph Conrad and Henry Sienkiewicz. ANSWER: Republic of **Poland** [or Rzeczpospolita **Polska**; prompt on **Russia** before "Spanish play"]

19. A technique utilizing satellites that lets two or more of these devices work as a single large one relies on an atomic clock, usually a hydrogen maser, and is based on Roger Jennison's closure-phase techniques. Very Long Baseline Interferometry is one strategy for using these devices, one type of which is named for Schmidt and Cassegrain. The optical variants of these devices come in reflecting and refracting types, named for Newton and Galileo respectively. For 10 points, name these devices that form magnified images of celestial objects. ANSWER: **telescopes** [accept **radio telescopes** or **optical telescopes**]

- 20. Early in this man's reign, he invaded the low countries during the War of Devolution. This king, whose presumptive successor was known as the "Grand Dauphin," renounced the Treaty of the Hague, leading to a war that included the battles of Ramillies and Malplaquet. This man's mother Anne of Austria served as regent with the assistance of Cardinal Mazarin. For 10 points, name this king of France who lost the War of the Spanish Succession, constructed the palace at Versailles, and was called the "Sun King" during his 62-year reign from 1643 to 1715. ANSWER: Louis XIV [or Louis the Great; or Louis le Grand; prompt on Louis; accept Louis the Sun King or Louis le Roi Soliel before mentioned]
- TB1. One work set in this country describes an affair between Alex Thomas and Iris Chase. In another work set in this country, a young orphan girl lives with Matthew and Marilla Cuthbert. Author Lucy Maud Montgomery hails from this country, which provides the setting for *The Blind Assassin*. Writers from this country include the authors of *Dance of the Happy Shades*, *Life of Pi*, *The English Patient*, and *The Handmaid's Tale*. For 10 points, name this country, the home of Alice Munro, Yann Martel, Michael Ondaatje and Margaret Atwood.

ANSWER: Canada

TB2. As a child, this man received the nickname *kozaru* because his facial features and skinny frame resembled that of a monkey. Upon the assassination of this man's liegelord, he defeated Akechi Mitsuhide at the Battle of Yamakazi. This leader, who initiated construction of Osaka Castle, led failed invasions of Korea in 1592 and 1598. After this man died, thus ending the Sengoku period, his son Hideyori surrendered power to Tokugawa Ieyasu. For 10 points, name this second "great unifier" of Japan who succeeded his former lord Oda Nobunaga.

ANSWER: Tovotomi Hideyoshi [prompt on Hideyoshi]

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1. The second of these events sprung up in New York's "burned-over district." For 10 points each:

[10] Name these religious and spiritual revivals that seized the population multiple times in American history.

ANSWER: **Great Awakening**s

[10] This former actor turned minister, who travelled all over North America delivering sermons, brought the First Great Awakening to Europe, earning his nickname of "The Great Itinerant."

ANSWER: George Whitefield

[10] One consequence of the Second Great Awakening was this movement, which focused on limiting consumption of alcohol. It laid the foundation for later prohibition groups.

ANSWER: temperance movement

2. In this text, a man eats a book that tastes like honey in his mouth but makes his belly bitter. For 10 points each: [10] Name this book of the Bible, which notes that the number of the beast is 666 and that 144,000 people will be saved before an epic sky-battle between Saint Michael and Satan.

ANSWER: Book of **Revelation** [do not accept "Revelations"]

[10] Tradition holds that the Book of Revelation was written by this author of the fourth gospel.

ANSWER: John the Apostle [or Yohanna]

[10] John writes that he was on this island when Jesus appeared to him and showed him the events of Revelation.

ANSWER: Patmos

3. The CAM type of this process occurs in cacti. For 10 points each:

[10] Name this process by which plants convert carbon dioxide and water into glucose and oxygen using the power of light.

ANSWER: photosynthesis

[10] In many plants, this sequence of redox reactions, which includes 3-phosphoglycerate as an intermediate, comprises the light-independent stage of photosynthesis.

ANSWER: \underline{Calvin} -Benson-Bassham cycle [or \underline{CBB} cycle; or $\underline{reductive\ pentose\ phosphate}$ cycle; or $\underline{C3}$ cycle; prompt on $\underline{dark\ reactions}$]

[10] These protein complexes, which are found in the thylakoid membranes of plants, algae, and cyanobacteria, are the sites of photosynthesis and are numbered I and II.

ANSWER: **photosystem**s [I or II]

4. In this play, Pozzo forces Lucky to "think" by capping him with Vladimir's hat. For 10 points each:

[10] Name this play in which two men who call each other "Didi" and "Gogo" eat some dubious-looking vegetables and fail to hang themselves on a tree because of a shoddy belt.

ANSWER: Waiting for Godot [or En Attendant Godot]

[10] This Irish absurdist author of *Krapp's Last Tape* wrote *Waiting for Godot*.

ANSWER: Samuel [Barclay] Beckett

[10] In this play, Beckett depicts the mutually parasitical relationship between Hamm, who sits in a throne in the center of the room, and Clov, his limping servant.

ANSWER: *Endgame* [or *Fin de Partie*]

- 5. This group assassinated President Premadasa in 1993. For 10 points each:
- [10] Name this terrorist group that wanted to form a separate state from the rest of the Buddhist Sinhalese population.

ANSWER: <u>Tamil Tigers</u> [or <u>Liberation Tigers</u> of Tamil Eelam; or <u>LTTE</u>; prompt on <u>Tigers</u>]

[10] The Tamil Tigers operated in this island country separated from India by the Palk Strait.

ANSWER: Sri Lanka

[10] The Tamil Tigers assassinated a prime minister of this Indian political family, Rajiv, in 1991. A female member of this family was assassinated by her Sikh bodyguards in 1984.

ANSWER: Gandhi family [accept Rajiv Gandhi or Indira Gandhi]

6. Harold Kroto, Robert Curl, and Richard Smalley discovered this molecule. For 10 points each:

[10] Name this unusual carbon molecule that forms a geodesic and has the formula C_{60} .

ANSWER: <u>buckminsterfullerene</u> [or <u>buckyball</u>s; prompt on <u>fullerene</u>]

[10] Compounds with only one element may bond to each other in different structures and configurations in this phenomenon, as exemplified by fullerenes and diamonds for carbon.

ANSWER: <u>allotrope</u>s [accept word forms like <u>allotropy</u>; do not accept "allotrophy"]

[10] This allotrope of carbon, which can sometimes be assembled with Scotch tape, has a hexagonal, one-atom-thick structure that can be rolled up for a number of different applications.

ANSWER: graphene

7. This composer's only opera is *Duke Bluebeard's Castle*. For 10 points each:

[10] Name this Hungarian composer who also wrote a Concerto for Orchestra.

ANSWER: Bela **Bartok** [accept names in either order]

[10] Bartok wrote six of these compositions, which were created by Franz Josef Haydn and are performed by two violins, a viola, and a cello.

ANSWER: **string quartet** [prompt on partial answer]

[10] Bartok's *String Quartet No. 4* has the strings playing exclusively using this "pinched" technique, a form of which he names.

ANSWER: pizzicato [prompt on plucking]

8. This law's namesake constant is equal to one over the quantity four pi times the permittivity of free space. For 10 points each:

[10] Name this inverse-square law of the attraction or repulsion between two charged particles.

ANSWER Coulomb's law

[10] This set of equations, named for a Scottish scientist, includes Gauss's laws of electricity and magnetism, Faraday's law of induction, and Ampere's law.

ANSWER: Maxwell's equations

[10] Maxwell modified Ampere's law to account for this quantity that explains the relationship between a magnetic field and an electric field outside of a conductor.

ANSWER: **displacement current** [prompt on **D**]

9. This book was published under the pseudonym Victor Eremita. For 10 points each:

[10] Name this book that includes sections called "Diapsalmata" and "The Diary of a Seducer."

ANSWER: *Either/Or*: A Fragment of Life [or *Enten/Eller*]

[10] This Christian Danish philosopher, who used many pseudonyms and wrote *Fear and Trembling*, penned *Either/Or*.

ANSWER: Søren [Aabye] Kierkegaard

[10] Kierkegaard's university thesis described the "concept of irony" and made "continual reference" to this philosopher, who was forced to drink hemlock in ancient Greece.

ANSWER: Socrates

10. This artist depicted a woman falling through swirling clouds and then lying on the ground in *The Suicide of Dorothy Hale*. For 10 points each:

[10] Name this Mexican artist whose many self-portraits include one with a monkey on her shoulder.

ANSWER: Frida Kahlo [or Magdalena Carmen Frieda Kahlo y Calderón]

[10] Frida Kahlo was married to this Mexican muralist of *Detroit Industry*.

ANSWER: Diego Rivera

[10] Rivera created this mural for the Rockefeller Center, but its inclusion of Vladimir Lenin so upset Nelson Rockefeller that it remained covered with drapes until its destruction in 1934.

ANSWER: Man at the Crossroads [accept Man, Controller of the Universe]

11. This author wrote a work in which the distillery owner Jiu'er rallies her workers to fight back against Japanese invaders. For 10 points each,

[10] Name this Nobel Prize-winning author of *Red Sorghum*.

ANSWER: Mo Yan [prompt on partial answer; or Guan Moye]

[10] Mo Yan writes in this language, also used by Nobel Laureate Gao Xingjian and nearly one billion other people.

ANSWER: Mandarin Chinese [or Guanhua; prompt on Chinese]

[10] A semi-autobiographical Gao Xingjian novel is titled for the "soul" one of these geographic features.

ANSWER: [Soul] Mountain [or lingshan]

12. This golfer set the scoring record at the 1997 Masters en route to becoming that tournament's youngest champion. For 10 points each:

[10] Name this 14-time major champion.

ANSWER: [Eldrick Tont] Tiger Woods

[10] This brash New Zealander shared many awkward high-fives with Tiger Woods as his caddy from 1999 until he was fired in 2011.

ANSWER: Steve Williams

[10] Steve Williams now caddies for this Aussie, who won his first major championship at the 2013 Masters tournament after a runner-up at the 2012 Open Championship.

ANSWER: Adam [Derek] Scott

13. This architect designed the East Wing of the National Gallery of Art. For 10 points each:

[10] Name this Chinese-American architect, who also designed the glass pyramid at the entrance of the Louvre.

ANSWER: [Ieoh Ming] I.M. Pei

[10] I.M. Pei's John Hancock Tower was built in this East Coast city, also home to Faneuil Hall.

ANSWER: Boston

[10] Pei also designed this pyramid-shaped building located on the shores of Lake Erie in Cleveland, Ohio.

ANSWER: **Rock and Roll Hall of Fame** and Museum [prompt on partial answer]

- 14. For 10 points each, name the following about going in circles.
- [10] For a given curve and point, this quantity for the curve is equal to the net number of times it passes anticlockwise around the point.

ANSWER: winding number [prompt on partial answer]

[10] The winding number of a closed curve is a special case of the integral formula named for this French mathematician, who names a generalization of the triangle inequality with Schwarz.

ANSWER: Augustin-Louis Cauchy

[10] The Cauchy-Binet formula gives the determinant of the product of two rectangular versions of these arrays of numbers, which are comprised of terms called elements.

ANSWER: matrices [or matrix]

- 15. One character in this play writes letters to Shep Huntleigh and is haunted by the memory of polka music. For 10 points each:
- [10] Name this play in which a former owner of Belle Reve has "always depended on the kindness of strangers."

ANSWER: A Streetcar Named Desire

[10] This author of A Streetcar Named Desire depicted the romantic disappointments of Laura Wingfield in The Glass Menagerie.

ANSWER: [Thomas Lanier] Tennessee Williams [III]

[10] In this Tennessee Williams play, a character rails against mendacity as his brother Gooper lies about a cancer diagnosis to get a cotton inheritance.

ANSWER: Cat on a Hot Tin Roof

- 16. James Frazier's *The Golden Bough* was re-released with a subtitle referring to religion and this practice. For 10 points each:
- [10] Name this practice, whose key role in farming the coral gardens titles a Bronislaw Malinowski work about the Trobrianders.

ANSWER: magic

[10] Malinowski wrote this 1922 study of the Trobrianders that forms a trilogy with *The Coral Gardens and their Magic* and *The Sexual Life of Savages*.

ANSWER: Argonauts of the Western Pacific

[10] Malinowski is usually credited with inventing this type of anthropological observation in which the social scientist becomes embedded in the culture being observed.

ANSWER: participant observation

- 17. This city's Temple to Apollo once held an egg-shaped stone called the Omphalos. For 10 points each:
- [10] Name this Greek city, which in ancient times held a famous Oracle whose advice was sought by rulers from countries throughout the Mediterranean.

ANSWER: Delphi

[10] The priestess of the Oracle at Delphi was given this name, in honor of the monstrous serpent that Apollo slew at Delphi.

ANSWER: Pythia

[10] This god had an oracle at Dodona, where rustling oak leaves were used to interpret his messages.

ANSWER: Zeus

- 18. This man became dictator of Rome five times. For 10 points each:
- [10] Name this general who defeated Vercinegetorix at Alesia, after which he proceeded to cross the Rubicon and name himself dictator for life.

ANSWER: Gaius Julius Caesar [prompt on Caesar]

[10] Julius Caesar defeated Vercinegetorix in this region of Europe, now southern France.

ANSWER: Gaul

[10] In his youth, Caesar was outraged when a group of people of this type attempted to ransom him for only 20 talents; Caesar insisted they ask for 50.

ANSWER: **pirate**s [prompt on more general answers like thieves, brigands, or outlaws]

- 19. During this event, Ludvik Vaculik wrote the "Two Thousand Words." For 10 points each,
- [10] Name this 1968 event in which the people of Czechoslovakia attempted to introduce democratic ideas into their government only to be crushed by troops sent by Brezhnev.

ANSWER: Prague Spring [or Prazske jaro; or Prazska jar]

[10] The Prague Spring began when this reformist was elected First Secretary of the Czechoslovakian communist party.

ANSWER: Alexander Dubcek

[10] This Romanian dictator, who was later killed with his wife Elena on Christmas day, was one of the few in the Warsaw Pact to support Dubcek in his democratic reforms.

ANSWER: Nicolae Ceaucescu

- 20. In one play by this author, the Maniac impersonates a "Special Counsel to the High Court" and lets the audience determine which characters he will kill with a bomb. For 10 points each:
- [10] Name this Nobel Prize-winning author of *The Accidental Death of an Anarchist*.

ANSWER: Dario Fo

[10] Like Umberto Eco, Dario Fo hails from this European country.

ANSWER: <u>Italy</u> [or <u>Italian</u> Republic; or Reppublica <u>Italiana</u>]

[10] This Italian playwright created the Boy, who shoots himself after a little girl drowns in a fountain, in his play *Six Characters in Search of an Author*.

ANSWER: Luigi Pirandello

- 21. In SI units of grams per cubic centimeter, this measure for water is one. For 10 points each:
- [10] Name this quantity, symbolized rho, which is equal to a material's mass per unit volume.

ANSWER: density [accept word forms]

[10] The ratio of a substance's density to a reference substance is known by this name. Generally, water is used as the reference for liquids and air is used for solids.

ANSWER: specific gravity

[10] This Greek mathematician used density to prove the embezzlement of gold, supposedly leading him to proclaim "Eureka!" He also developed a related principle of buoyancy.

ANSWER: Archimedes