



1. This man wrote a poem beginning "Sunset and evening star, and one clear call for me!" He also wrote "'Tis better to have loved and lost than never to have loved at all" in a work dedicated to his dead friend A. H. Hallam. This author of "Crossing the Bar" and *In Memoriam* wrote another poem which asks "when can their glory fade?" about a group who rode "into the valley of Death." For 10 points, name this British poet who wrote "The Charge of the Light Brigade."

ANSWER: Alfred, Lord **Tennyson**

088-12-36-13101

2. The random coil structure of these entities is described by a quantity that measures the distance from its center of mass to its outside edge, the radius of gyration. Component chains of them are connected by crosslinks. Plastics and rubber are examples of materials made from synthetic ones of these. For 10 points, name these substances like teflon or nylon that consist of repeating units of monomers.

ANSWER: **polymers**

131-12-36-13102

3. This man defeated Robert LaFollette, Jr., to win the Republican nomination for the Senate in his state of Wisconsin. This man was asked during one hearing by Joseph Welch, "Have you left no sense of decency?" In his "Enemies from Within" speech to the Republican Women's Club of Wheeling, West Virginia, this man claimed to have a list of 205 people in the State Department who were Communists. For 10 points, name this man who led a Communist witch-hunt during the 1950s.

ANSWER: Joseph Raymond **McCarthy**

134-12-36-13103

4. This country contains the dry, iron rich Pilbara region, which holds the Hamersley mountains. That region is west of the Tanami Desert and south of the Kimberley. Mount Augustus, the world's largest monolith, is located in this country, and its highest point is Mount Kosciuszko, which is located in the Great Dividing Range. For 10 points, identify this nation that is home to Ayers Rock, Melbourne, and Sydney.

ANSWER: Commonwealth of **Australia**

146-12-36-13104

5. This poem originally appeared immediately after "My future will not copy fair my past." It compares a certain action to the manner in which men "strive for right." The speaker promises to do the title action "better after death" and "to the depth and breadth and height my soul can reach." This poem was addressed to the author's husband Robert. For 10 points, name this poem from *Sonnets from the Portuguese* that proclaims "let me count the ways," a work of Elizabeth Barrett Browning.

ANSWER: "**How Do I Love Thee?** Let Me Count the Ways..." [or "Sonnet **43**" from *Sonnets from the Portuguese*]

019-12-36-13105

6. The fourth movement of this man's penultimate symphony includes a tone row that omits only the G natural from the notes of the chromatic scale, while his final symphony ends with a five-voice fugato and was given its mythological nickname by J.P. Salomon. This composer of the "Great G Minor" and "Jupiter" symphonies also wrote a serenade for strings called *Eine Kleine Nachtmusik* and For 10 points, name this Salzburg-born Classical-era composer of an unfinished *Requiem*.

ANSWER: Wolfgang Amadeus **Mozart** [or Johannes Chrysostomus Wolfgangus Theophilus **Mozart**]

040-12-36-13106

7. In July 2011, this country's government angered the EU by proposing to deport unemployed Polish migrant workers. One member of this country's parliament is the leader of the Party for Freedom, and has gotten in trouble in recent years for making a film called *Fitna* (FIHT-nah), comparing the Quran to *Mein Kampf*, and other criticisms of Islam. For 10 points, name this country where Geert Wilders (GAYRT WILL-ders) was nevertheless acquitted of hate speech in a June 2011 trial.

ANSWER: Kingdom of the **Netherlands** [or Koninkrijk der **Nederlanden**]

142-12-36-13107

8. Classes within this phylum include Stylophora and Blastoidea. Aristotle's lantern is a chewing organ of one member in this phylum, and most members possess a stone canal which connects to the madreporite to help regulate water balance. They include the class Asteroidea. Aside from the water vascular system, members of this phylum possess tube feet and pentaradial symmetry. For 10 points, identify this phylum that includes sea urchins and starfish.

ANSWER: **echinodermata**

146-12-36-13108

9. At the Marburg Colloquy, this figure insisted on the Real Presence of Christ in the Eucharist. After refusing the demands of Charles V at the Diet (DEE-et) of Worms (VURMS), this formulator of the *sola fide* (FEE-day) doctrine was excommunicated by Pope Leo X. This man's major conflict with the Catholic Church was over the sale of indulgences. For 10 points, name this man who started the Protestant Reformation with his 95 Theses.

ANSWER: Martin **Luther**

005-12-36-13109

10. Hemholtz Free Energy gives the thermodynamical potential in terms of the useful form of this. The path dependence of this quantity is shown in the first law of thermodynamics which states that this is equal to the integral of the pressure times the volume. Per one theorem it is equal to the change in kinetic energy, and it is measured in joules. For 10 points, name this quantity, which is equivalent to force times distance.

ANSWER: **work**

135-12-36-13110

11. This thinker's autobiography is entitled *Blackberry Winter*. She used conversation on a tape recorder with James Baldwin to coauthor *A Rap on Race*. This anthropologist also collaborated with Gregory Bateson to publish *Balinese Character*. Her most famous work includes sections titled "education for choice" and "formal sex relations." For 10 points, identify this author of *Coming of Age in Samoa*.

ANSWER: Margaret **Mead**

146-12-36-13111

12. In this novel, Muley Graves reveals the fates of the families in the protagonist's neighborhood, and a former preacher is killed in a conflict with the police over the wages of peach pickers. After the death of Jim Casy, Rose of Sharon gives birth to a stillborn baby, and at the beginning of this novel, Tom Joad is released from jail. For 10 points, name this novel chronicling an Oklahoman family traveling west during the Dust Bowl, a work of John Steinbeck.

ANSWER: *The Grapes of Wrath*

064-12-36-13112

13. One of this composer's works stars Rusty the Steam Engine, a toy train portrayed by an actor on roller skates. In another work by this composer of *Starlight Express*, Old Deuteronomy chooses Grizabella to be reborn after she sings "Memory." That work also contains such characters as Macavity and Mr. Mistoffelees. Another of his works includes the song "Music of the Night", which is sung to Christine Daae. For 10 points, name this composer of *Cats* and *The Phantom of the Opera*.

ANSWER: Baron Andrew **Lloyd Webber** of Sydmonton [prompt on partial last name]

134-12-36-13113

14. One character in this collection demands a roasted pig's head from a sick man, and is then told that the sick man is sitting on a special gift. Another story in this collection ends with the marriage of Emily and Palamon following the death of Arcite (ARK-ih-tay). That story is told by the Knight, who is then requited by the Miller. For 10 points, identify these stories which are told by pilgrims on their way to the tomb of Thomas a Becket and comprise a work by Geoffrey Chaucer.

ANSWER: *The Canterbury Tales*

019-12-36-13114

15. One of these regions, named the Taklimakan (TAHK-lim-uh-CON), was on the route of the Silk Road. The world's largest oilfield is found in one of these called the Empty Quarter, or the Rub' al-Khali. One of these geographic features named for Sonora runs into California and Arizona, where it includes the smaller Mojave one. The largest one in the world is north of the Sahel in Africa, and has massive dunes. For 10 points, name these dry regions of land, such as the Gobi, Great Sandy, and Sahara.

ANSWER: **deserts**

027-12-36-13115



1A. What type of notation is used to express the worst-case scenario for various algorithms, such as the value of $O(n^2)$ ("Oh of N squared") for a quicksort?

ANSWER: **Big O** notation

1B. What set of numbers begins with zero and one, and sees each number after that set equal to the sum of the two previous numbers in the sequence?

ANSWER: **Fibonacci** number or **Fibonacci** sequence

2A. Which word can refer to a type of object in programming, or in biology, the taxonomic rank between phylum and order?

ANSWER: **class**

2B. Name the Northern Irish golfer who won the 2011 US Open by eight shots over Jason Day.

ANSWER: Rory **Mellroy**

3A. This is a 10-second calculation question. What is the mode of the following set? {4, 6, 2, 2, 4, 4, 6}

ANSWER: **4**

3B. This is a 10-second calculation question. What is the largest possible value of x in $10=(x+5)^2+1$?

ANSWER: $x = -2$

4A. What American poet recited "On the Pulse of Morning" at Bill Clinton's inauguration and wrote an autobiography titled *I Know Why the Caged Bird Sings*?

ANSWER: Maya **Angelou** [or Marguerite **Johnson**]

4B. Which actress and singer collaborated with Pitbull on the hit 2011 version of "On the Floor"?

ANSWER: Jennifer **Lopez**

5A. This is a 20-second calculation question. Find the length of the longest diagonal in a rectangular prism of side lengths 6, 8, and 24 units.

ANSWER: **26** units

5B. This is a 20-second calculation question. There are four words that can be made from the letters A, E, M, and T: mate, meat, tame, and team. What is the probability that a word is made from a random arrangement of those four letters? Express your answer as a fraction in lowest terms.

ANSWER: **1/6**

6A. What painting by Marcel Duchamp was described by Julian Street as "an explosion in a shingle factory" when it was displayed at the Armory Show in 1913?

ANSWER: ***Nude Descending a Staircase, No. 2*** [or ***Nu descendant un escalier no. 2***]

6B. What former First Lady and founder of a famous California rehabilitation center died in July 2011?

ANSWER: Elizabeth Ann "Betty" Bloomer Warren **Ford** [or Elizabeth Ann "Betty" **Bloomer**; or Elizabeth Ann "Betty" **Warren**]

7A. This is a 30-second calculation question. What is the remainder of $(5x^4+3x^2-2)/(x+1)$?

ANSWER: **6**

7B. This is a 30-second calculation question. Solve on the domain x is between negative π over 2 and π over 2, inclusive: $2 \sin^2 x + \sin x - 1 = 0$. Express all answers in terms of π .

ANSWER: $\{-\pi/2, \pi/6\}$ [or $x =$ **negative π over 2 and $x = \pi$ over 6**; do not accept or prompt on partial answers; do not accept answers including " 5π over 6" as that is not in the domain]

8A. What religious tribunal intended to root out non-Catholics was established by Ferdinand and Isabella and led for a time by Tomas de Torquemada?

ANSWER: **Spanish Inquisition** [prompt on **inquisition**]

8B. Identify this type of device that Foucault used to demonstrate that the Earth spins on its axis.

ANSWER: **pendulum** [or **Foucault's pendulum**]

9A. Identify the country which experienced a Golden Age during which the playwrights Lope de Vega and Pedro Calderon de la Barca were active.

ANSWER: **Spain** [or Reino de **España**; or Kingdom of **Spain**]

9B. What 1857 decision of the Taney (TAW-nee) Supreme Court claimed that slaves could never be citizens of the United States?

ANSWER: *Dred **Scott** v. John F.A. Sandford* [or Dred **Scott** decision]

10A. Name this muscular organ which in humans is subdivided into a left and right atrium and two ventricles.

ANSWER: **heart**

10B. What city on the Severn River is the seat of Anne Arundel County and the home of the US Naval Academy?

ANSWER: **Annapolis**



1. The reaction of these compounds with carboxylic acids is known as the Fischer esterification. Oxidation of the secondary form of these compounds results in ketones. One of these compounds can be formed from the hydration of ethylene and has chemical formula C_2H_6O . For 10 points, identify this class of organic compounds containing a hydroxyl group, the simplest of which include methanol and ethanol.

ANSWER: alcohols [accept hydroxyls before mention]

126-12-36-13117

2. One poem by this man concludes by describing "a mind at peace with all below, a heart whose love is innocent" and mentions "the night of cloudless climes and starry skies." This poet of "She Walks in Beauty" also wrote an unfinished satirical epic about a son of Inez who is easily seduced by women, parodying a legendary Spanish seducer. For 10 points, name this British Romantic poet of *Don Juan* (JEW-un) who died fighting in the Greek War of Independence.

ANSWER: Lord Byron [or George Gordon]

014-12-36-13118

3. This man led an invasion of Ireland that saw a massacre at Drogheda (DRAW-eh-duh). John Lambert wrote up the "Instrument of Government" by which this man took power. This man's side under Lord Fairfax won at the Battles of Naseby and Marston Moor and had the New Model Army. This man's son Richard succeeded him before being removed in favor of Charles II. For 10 points, name this man who, after the English Civil War, served as the first Lord Protector of England.

ANSWER: Oliver Cromwell

132-12-36-13119

4. In one work, this thinker introduced the picture theory of language and examined the duck-rabbit illusion. He also used the "Beetle in a Box" thought experiment to critique the possibility of a language known only to its developer. Another work by this developer of private language contains seven propositions and claims that what we cannot speak of, we must pass over in silence. For 10 points, name this philosopher whose works include the *Philosophical Investigations* and *Tractatus Logico-Philosophicus*.

ANSWER: Ludwig Wittgenstein (VIT-gen-st"eye"n) [or Ludwig Josef Johan Wittgenstein]

040-12-36-13120

5. This novel ends with a bird chirping "Poo-tee-weet?" The protagonist of this novel is forced to mate with the beautiful actress Montana Wildhack in a dome on planet Tralfamadore. This novel jumps between different periods in the protagonist's life because he is "unstuck in time." For 10 points, name this novel in which Billy Pilgrim experiences the firebombing of Dresden, a work of Kurt Vonnegut.

ANSWER: Slaughterhouse-Five

080-12-36-13121

6. A dimer (DIE-murr) of an ion of this element is referred to as the "pyro" form. This element combines with calcium to form hydroxyapatite, a structural component of bones. Adenosine is linked to 3 molecules named after this element in a compound that our cells break down to release energy. This element is found in the head of a molecule that links it to a lipid in the bilayer creating most cell membranes. For 10 points, name this element, with atomic number 15 and symbol P.

ANSWER: phosphorus [or P before mentioned]

027-12-36-13122

7. This man wrote about laws of chemistry applying to passion in Eduard's second marriage in his novel *Elective Affinities*. In an epistolary novel by this author, the title character writes to Wilhelm discussing his love of Albert's wife Lotte before committing suicide. In a long verse drama, he described a title character who seduces Gretchen after making a bargain with Mephistopheles. For 10 points, name this German author of *The Sorrows of Young Werther* and *Faust*.

ANSWER: Johann Wolfgang von **Goethe** (GER-tuh)

119-12-36-13123

8. This figure loses an eating contest against fire in Utgard (OOT-"guard"). When this figure steals the necklace Brisingamen (BREE-"sing"-ah-men), Heimdall (HAIM-dahl) turns into a seal and fights him to get it back. He is the father of the Midgard Serpent, and due to his shapeshifting skills, he is also the mother of Sleipnir (SLAYP-neer). This god is bound to a rock where a snake drips poison onto him as punishment for manipulating Hodur into throwing a mistletoe dart and killing Balder. For 10 points, name this Norse trickster god.

ANSWER: **Loki**

142-12-36-13124

9. This man was one of the first to chart the course and temperature of the Gulf Stream. He was the first person to assign positive and negative charges to electricity, which he called "vitreous" (VIH-tree-us) and "resinous" (REH-sih-nus) fluid. He also showed that the charge in a Leyden jar was stored in the glass and not in the water. For 10 points, name this Founding Father and inventor of the lightning rod who is said to have shown the electrical nature of lightning by flying a kite in a storm.

ANSWER: Benjamin **Franklin**

132-12-36-13125

10. Fragmental material produced by events caused by these structures is called tephra. These structures can produce pahoehoe (pa-ho-EE-ho-EE) and aa (AH-ah) flows, and the collapse of land following events caused by these structures forms calderas. For 10 points, identify these geologic structures, examples of which include Mount St. Helens and Krakatoa, capable of violently erupting magma.

ANSWER: **volcanoes**

126-12-36-13126

11. In one of this man's short stories, a disguised Union scout lures the protagonist into attempting to burn down the title structure to halt the army's advance, and he originally published one work as *The Cynic's Word Book*. In that aforementioned story, the protagonist fantasizes about a reunion with his wife and surviving his hanging. For 10 points, name this American author of *The Devil's Dictionary* who wrote about Peyton Farquhar in "An Occurrence at Owl Creek Bridge."

ANSWER: Ambrose Gwynnett **Bierce**

136-12-36-13127

12. This leader was rescued from captivity by Otto Skorzeny and later led the Salo Republic. Before invading Albania, this leader had ousted Haile Selassie with an invasion of Ethiopia. This man signed the Lateran Treaty with the Vatican City and allied his country with Germany via the Pact of Steel. He came to power when his Blackshirts made a march on Rome. For 10 points, name this man who pledged to make the trains run on time and who served as the fascist dictator of Italy during World War II.

ANSWER: Benito Amilcare Andrea **Mussolini**

141-12-36-13128

13. Photographic depictions of this time period were collected in *You Have Seen Their Faces* by Margaret Bourke-White, while James Agee collaborated with Walker Evans to depict Southern sharecroppers during it in *Let Us Now Praise Famous Men*. A photograph taken during this time period in California shows a destitute pea-picker with a haunted look on her face; that work is Dorothea Lange's *Migrant Mother*. For 10 points, name this economic catastrophe of the 1930s.

ANSWER: the **Great Depression** [or the **Dust Bowl**; or the **Dirty Thirties**; or the **New Deal** era; prompt on **Franklin Delano Roosevelt's first presidency**; prompt on the **1930s**]

141-12-36-13129

14. A more accurate value of this quantity was determined in a 2011 experiment that used x-ray crystallography on a sample of silicon. The average kinetic energy of a particle is three halves times the ideal gas constant times temperature divided by this constant. This quantity is the number of atoms in twelve grams of carbon-12. For 10 points, name this number of particles in a mole of a substance, approximately equal to 6.022×10^{23} .

ANSWER: **Avogadro's number** [or the **Avogadro constant**]

131-12-36-13130

15. While holding this position, Lazaro Cardenas nationalized his country's oil refineries. From 1929 to 2000, all who held this position were members of the Institutional Revolutionary Party, or PRI (PREE). Francisco Madero held this position after sparking the revolution that overthrew Porfirio Diaz, who held this position for over thirty years. For 10 points, name this head of state position once held by Vicente Fox and currently held by Felipe Calderon.

ANSWER: **president of Mexico** [prompt on **leader of Mexico**; prompt on **president**]

121-12-36-13131



1. This politician had James Blount investigate the overthrow of Queen Liliuokalani of Hawaii. During one political campaign, this politician was faced with chants of "Ma, ma, where's my pa?" During this President's second term, he helped break up the Pullman Strike; that second term came after he was earlier defeated by Benjamin Harrison. For 10 points, name this politician who served as both the twenty-second and twenty-fourth Presidents of the United States.

ANSWER: Stephen Grover **Cleveland**

088-12-36-13132

2. One character on this show throws away vegan bacon to ensure no one ever has to eat it. Characters on this show own shares of the Snakehole Lounge, and Parker Posey plays an official from the rival town of Eagleton. The first season centered on filling in a giant hole, and the third season focused on planning a local harvest festival. For 10 points, name this NBC sitcom in which Amy Poehler plays Leslie Knope, an employee of the title branch of the Pawnee, Indiana government.

ANSWER: **Parks and Recreation**

002-12-36-13133

3. Although he is not St. Jerome, this man wrote biographies of thirty-six historical and twelve Biblical figures titled *On Illustrious Men*. This poet addressed many of his poems to a woman he saw on Good Friday in the church of Sainte-Claire d'Avignon (dav-in-YAHN). He developed a poetic form consisting of an octave followed by a sestet exemplified by his poems dedicated to Laura. For 10 points, name this Italian poet of the fourteenth century who names a type of sonnet.

ANSWER: **Petrarch** [or Francesco **Petrarca**]

132-12-36-13134

4. One piece of legislation passed while this document was in effect created the system of township land grants. Despite the success of the Northwest Ordinance, the government created by this document failed to stop a rebellion by poor farmers in Massachusetts that closed courts. That rebellion was led by Daniel Shays. For 10 points, name this document replaced in 1989 that preceded the Constitution as the governing document of the United States.

ANSWER: **Articles of Confederation** and Perpetual Union

123-12-36-13135

5. In Ancient Greek, these forms were identical to those of the "middle," except in the future and aorist (AY-or-ist). In Latin, deponent verbs could only take the endings normally used in this paradigm. In French, it is expressed with "to be" plus a past participle, and the preposition *de* or *par* marks the agent. For 10 points, name this grammatical voice, used in situations where the subject is acted upon.

ANSWER: **passive** voice

142-12-36-13136