

Tossups

- 1. Abnormally high levels of this chemical are linked to pheochromocytoma [fee-oh-chromo-"sigh"-toh-mah] and other tumors in the sympathetic ganglia. Its synthesis begins when tyrosine is converted into L-DOPA. It is created by the body in response to high levels of (*) histamine, and it is administered to victims of cardiac arrest and anaphylaxis. Heart rate is regulated by, for 10 points, what hormone responsible for the "fight or flight" response?**
 Answer: adrenaline (accept epinephrine)
- 2. Muktsah--thirty-nine forms of creative work--are prohibited on this day. At its opening, called kabbalat, this day is personified as a bride in the song "L'kha Dodi." One smells spices and dips a twisted candle in wine at the end of this holiday, a ceremony called (*) Havdalah. This weekly event begins with lighting candles, saying kiddush, and eating challah at sundown on Friday. For 10 points, name this weekly Jewish day of rest.**
 Answer: Shabbat (accept the Jewish Sabbath; accept Saturday before "kabbalat")
- 3. One character in this novel accidentally saves a man's life while looting corpses at Waterloo. In this novel, the protagonist pays 30 francs for Thenardier [teh-NAR-dee-AY] to open a gate, and Marius marries (*) Fantine's orphaned daughter, Cosette, whose guardian is pursued by Javert [jah-VAYR]. For 10 points, name this novel about Jean Valjean [jehon vah-JHON], a work by Victor Hugo.**
 Answer: Les Misérables (grudgingly prompt on Les Mis)
- 4. The magnetosphere of this planet is comparatively weak, as shown by Pioneer 11 and Voyager 2 flybys. This planet's largest moon was landed on by the Huygens [HOY -gens] probe. This is the least (*) dense planet in the solar system, with a density of less than 1 gram per cubic centimeter. The Cassini gap separates the A and B rings of, for 10 points, what second largest planet in our solar system?**
 Answer: Saturn
- 5. During this war, the Yser River was flooded at its mouth on the North Sea to prevent enemy advances. That battle came a month after the 9th Army under Ferdinand Foch liberated Chalons, after which both armies fought over the Belgian town of (*) Ypres, ending the "race to the sea." Fighting near the Marne River gave way to trench warfare in, for 10 points, what war between the Allies and Central Powers ended by the Treaty of Versailles in 1918?**
 Answer: World War I or the First World War (prompt on the Great War, the War to end all Wars, and other such superlative names)
- 6. Alexis de Tocqueville's Democracy in America was intended to be a study of these institutions. Jeremy Bentham designed one of these called the Panopticon, and Philip Zimbardo simulated one of these at the University of (*) Stanford. Britain colonized Australia to serve as this institution, and San Francisco's Alcatraz Island was home to one of these buildings. For 10 points, name this type of institution that houses criminals.**
 Answer: prison (accept logical equivalents such as jail)
- 7. Izola Curry nearly killed this man during a book signing in 1958. This man led a march across the Edmund Pettus Bridge in Selma, Alabama, and he helped form the Southern Christian Leadership Conference. This minister delivered the (*) "I've Been to the Mountaintop" speech the day before he was shot by James Earl Ray in 1968. For 10 points, name this civil rights leader who delivered the "I Have a Dream" speech.**
 Answer: Dr. Martin Luther King, Jr. (prompt on MLK)

8. **This composer's solo piano pieces include "L'isle joyeuse," [leel joh-yooz] and his "symphonic sketches" include "Play of the waves." He was inspired by the Symbolist poet Stephane Mallarme for a work that opens with a chromatic flute solo, though this composer of (*) *La mer* is most famous for the third movement of his *Suite Bergamasque*. For 10 points, name this Impressionist composer of *Prelude to the Afternoon of a Faun* and "Clair de Lune."**
Answer: Claude Debussy
9. **A closed curve has at least four of these entities, at which the derivative of curvature equals zero. In graph theory, edges begin and end at these entities, which are also called (*) nodes. A hyperbola has two of these points on its major axis, while a parabola has one of these points on its axis of symmetry. For 10 points, give this mathematical term for a point at which the sides of a polygon intersect.**
Answer: vertex or vertices (prompt on nodes before "nodes" is read)
10. **A figure in this poem travels along the Mystic River and sees "a phantom ship with each mast and spar / across the moon like a prison bar." The title man travels through Middlesex, starting with Medford, waking men who "that day would be lying dead / pierced by a (*) British musket ball" at the start of the Revolution. For 10 points, name this poem by Longfellow, which demands, "Listen my children, and you shall hear / of the midnight ride of" the title character.**
Answer: Paul Revere's Ride

Half Time

11. **Fort Ross is a former Russian outpost in this state, which was once commanded by William B. Ide as an independent republic. Admitted as a free state after the Compromise of 1850, it saw a population boom after a valuable discovery at (*) Sutter's Mill led to an influx of prospectors nicknamed "forty-niners." For 10 points, name this former "Bear Flag Republic" where a Gold Rush sparked the growth of cities like San Francisco.**
Answer: California
12. **One law named for Isaac Newton describes the rate of transfer of this quantity, which does not change in adiabatic [ay-dee-uh-BAA-tik] processes. Without additional work it can only flow in one direction according to the (*) second law of thermodynamics. Because it is a type of energy, it is often measured in joules, and can also be measured in calories. For 10 points, name this quantity that can be transferred by convection, radiation, or conduction.**
ANSWER: heat (or thermal energy; prompt on energy before it is mentioned; do not accept temperature)
13. **This man signed a treaty with Hattusili III 16 years after engaging Muwatalli II in a large chariot battle. His reign saw the building of the Abu Simbel temples, including statues of him and his wife, Nefertari. Known to the Greeks as (*) Ozymandias, many scholars believe that this leader, who fought the Hittites at Kadesh, was the Pharaoh of the Book of Exodus. For 10 points, name this "Great" 19th dynasty Pharaoh of Egypt.**
Answer: Ramesses II or Ramesses the Great (accept Ramesses after "Great," and prompt on it before; accept Ozymandias before mentioned)

14. In one work by this playwright, Strepsiaes [strep-"SIGH"-ah-deez] burns down The Thinkery, and in another of his plays, Pisthetaerus [pis-the-TEH-rus] builds Cloud•cuckoo•land. Dionysus witnesses an underworld poetry battle in a play by this author of *The* (*) *Clouds* and *The Birds*. In another of his plays, the women of Greece refuse to sleep with their husbands until they end the Peloponnesian War. For 10 points, name this Greek comic playwright of *The Frogs* and *Lysistrata* [lis-is-TRAH-tah].
Answer: Aristophanes
15. This city's Paseo de la Reform is home to the "Angel of Independence" victory column and runs through Chapultepec Park. Overlooked by the mound volcano Ajusco [ah-HOO-skoh], this city north of (*) Puebla was built on an island in Lake Texcoco over the sacked ruins of Tenochtitlan; as a result, the artificial valley prevents wind from clearing out heavy smog. The most populous North American city is, for 10 points, what capital city?
Answer: Mexico City (accept Ciudad de Mexico)
16. In one of this artist's works, Mary supports an infant John the Baptist who looks, with clasped hands, toward the infant Christ. A distantly-seen bridge fades into blue behind a veiled figure in another work by this man. This painter of two (*) *Madonnas of the Rocks* painted an anatomical model inscribed in a circle and Francesco del Giocondo's wife with a mysterious smile. For 10 points, name this artist of *Vitruvian Man* and the *Mona Lisa*.
Answer: Leonardo da Vinci (accept either underlined name)
17. In a 2012 episode of this show, the hat store "Lids" saw an appearance by Psy ["sigh"] performing "Gangnam Style." Jay Pharoah portrays President Obama on this Lorne Michaels show, which once featured The (*) Lonely Island's Andy Samberg in "Digital Shorts" like "Lazy Sunday" and "I'm On a Boat." Tina Fey and Amy Poehler once hosted "Weekend Update" on, for 10 points, what NBC sketch comedy show shot "Live from New York?"
Answer: Saturday Night Live
18. This figure was called Polieos [poh-lee-AY-ohs] for his role in protecting city-states. He fathered Hebe [hee-bee], the cupbearer of the gods, he immortalized his lover Ganymede among the stars, and he swallowed Metis whole. This son of (*) Rhea won the Titanomachy ["titan"-ah-mah-kee] by forcing Cronus to vomit this god's siblings, including Demeter and Hades, allowing the age of Olympians to begin. Hera was the sister-wife of, for 10 points, what lightning-wielding chief Greek god?
Answer: Zeus Pater (accept Jupiter or Jove until "Greek" is read)
19. Lithium diisopropyl [die-eye-so-PRO-pill] amide is a "super" one of these chemicals. These chemicals saponify esters to make soaps, and they are defined as electron pair donors by Lewis. Examples of these include (*) ammonia and sodium bicarbonate, and they turn litmus paper blue and phenolphthalein [fee-nol-THAY-leen] pink. Sodium hydroxide is, for 10 points, what kind of chemical whose pH in water is greater than 7, the opposite of an acid?
Answer: bases (accept basic)
20. This novel's protagonist clashes with Blanche Ingram, and lives at Ferndean after refusing the opportunity to go to India with her cousin, St. John [sin-jin] Rivers. The title figure of this novel witnesses the death of (*) Helen Burns at a badly managed girls' school, and at Thornfield Manor, Grace Poole is employed to care for the insane Bertha Mason. The title woman marries Mr. Rochester in, for 10 points, what novel by Charlotte Brontë?
Answer: Jane Eyre

Bonuses

1. Joseph Hooker's Army of the Potomac lost this battle, even though they outnumbered the Confederate forces by more than 2-to-1. For 10 points each,
 - [10] Name this May 1863 battle near Fredericksburg, Virginia. The Confederate army lost an important general at this victory.
Answer: Battle of **Chancellorsville**
 - [10] This Confederate general lost his left arm and his life after a friendly fire incident following the Battle of Chancellorsville. He earned his nickname for standing his ground in an earlier battle.
Answer: Thomas J(onathan) "Stonewall" **Jackson**
 - [10] The death of Jackson severely affected this commander of the Army of Northern Virginia, who called Jackson his "right arm." This general surrendered to Ulysses S. Grant on April 9, 1865 to end the Civil War.
Answer: Robert E(dward) **Lee**

2. The title question is answered with "to the depth and breadth and height / My soul can reach." For 10 points each,
 - [10] Name this sonnet, whose speaker implores "Let me count the ways."
Answer: **How do I love thee?** Let me count the ways.
 - [10] This woman wrote "How do I love thee? Let me count the ways." Poems by this author are collected in *Sonnets from the Portuguese*, a nickname given to her by her husband, Robert.
Answer: Elizabeth Barrett **Browning**
 - [10] Elizabeth Barrett Browning wrote this epic poem about a title woman, who lives with Marian Erle ["early"] in Italy before finally consenting to marry her cousin, Romney.
Answer: **Aurora Leigh**

3. This SI unit is commonly used in place of units of mass or volume. For 10 points each,
 - [10] Identify this unit of for the amount of a substance.
Answer: **Moles**
 - [10] This constant is the number of units in a mole of substance. It is about equal to 6.02 times 10 to the 23rd.
Answer: **Avogadro's** number
 - [10] This constant gives the total charge of a mole of electrons, about 96,485 coulombs per mole.
Answer: **Faraday**(s) constant

4. Toulouse-Lautrec painted can-can dancers in a club named for this mechanical feature. For 10 points each,
 - [10] The Moulin Rouge [moo-LAHN rooj] is topped by a red one of these machines, which catch air with their blades to create power.
Answer: **windmills**
 - [10] This Dutch artist painted the windmill of the Moulin de la Galette [moo-LAHN duh lah gah-LET], as well as *The Potato Eaters* and *Starry Night*.
Answer: Vincent Willem **van Gogh**
 - [10] Dominated by yellow tones, this van Gogh painting shows a man in white standing by a pool table in the title restaurant.
Answer: The **Night Café** (accept Le **café de nuit**)

5. The deflection of cathode rays led to this fundamental particle's discovery. For 10 points each,
 [10] Name this lepton that was discovered by J. J. Thomson and carries a negative charge.
 Answer: **electrons**
 [10] This class of other leptons has electron, muon, and tau varieties. Their name relates to the fact that they are nearly massless and, unlike electrons, have no electric charge.
 Answer: **neutrinos** (do not accept "neutron")
 [10] Since neutrinos have no electric charge, they only interact through gravitation and this other fundamental force that is mediated by W and Z bosons.
 Answer: **weak** force (accept **weak** interaction; prompt on **electroweak**)
6. For 10 points each, give the following about swimming at the 2012 Olympics.
 [10] This American swimmer followed his 8-gold performance at Beijing with 4 golds and 2 silvers in London, giving him the most gold medals—18--and most overall medals--22 total--of any Olympian.
 Answer: Michael **Phelps**
 [10] In Phelps' first race of the 2012 Olympics, he placed fourth while this American rival took gold. This swimmer later trademarked the catchphrase "Yeah!," which apparently means "Yeah!"
 Answer: Ryan **Lochte** [LOCK-tee]
 [10] Phelps and Lochte finished gold-silver in the 200 meter version of this race, in which swimmers must use butterfly, backstroke, breaststroke, and freestyle strokes.
 Answer: (200m) Individual **medley** (accept **IM**)
7. These soldiers usually fought in phalanx formation, which created eight to ten rows of these soldiers; the front rows used large shields, and they fought with long spears. For 10 points each,
 [10] Give this term for an ancient Greek armored soldier.
 Answer: **hoplites**
 [10] For much of classical Greek history, this militaristic city-state's hoplites were considered the best army in the known world, thanks in part to the agoge system that took in boys at age 7.
 Answer: **Sparta** (accept **Lacedaemonia**)
 [10] This Agiad king led 300 Spartan hoplites at the Battle of Thermopylae; their shields defended well against Persian archers, and they lived for three days against the massive army of Xerxes the Great.
 Answer: **Leonidas** I of Sparta
8. This set of title characters includes Dmitri, Alyosha, and Ivan, the last of whom writes the poem "The Grand Inquisitor." For 10 points each,
 [10] Name this novel, in which the illegitimate child Smerdyakov is a servant to the title characters.
 Answer: The **Brothers Karamazov** (accept **Brat'ya Karamazovy**)
 [10] This Russian author of *The Gambler* and *The Idiot* wrote *The Brothers Karamazov*.
 Answer: Fyodor Mikhailovich **Dostoyevsky**
 [10] In this Dostoevsky novel, Raskolnikov kills Alyona Ivanovna, a pawnbroker, believing that the good he does with her money outweighs the evil of murder.
 Answer: **Crime and Punishment** (accept **Prestupleniya i nakazaniye**)
9. He was tied to the tree of life, Yggdrasil [IG-drah-sihl], for nine days. For 10 points each,
 [10] Name this wise "Allfather," the one-eyed leader of the Norse gods.
 Answer: **Odin** (accept **Woden**)
 [10] At Ragnarök, Odin will be devoured by Fenrir [FEN-reer], an enormous creature of this species, who was kept chained up by the gods.
 Answer: **wolf** (accept **wolves**)
 [10] While Fenrir was being chained, he bit off the hand of this spear-wielding Norse god of war, who will kill the hound Garm at Ragnarök.
 Answer: **Tyr** [teer] (accept **Tiw** [teew] or **Tiwaz** [TEE-watz])

10. Rumors of grave health surrounded this man even before his February 2011 resignation and June 2012 conviction of killing protesters in Tahrir Square and other demonstrations. For 10 points each,
[10] Name this former world leader who, after being overthrown during the Arab Spring, was succeeded by Mohamed Morsi.
Answer: (Muhammad) Hosni (El Sayed) **Mubarak**
[10] Mubarak was President of this African nation; he was sentenced to life imprisonment for not preventing the deaths of over 200 protesters in this country's capital, Cairo.
Answer: Arab Republic of **Egypt**
[10] This Islamic political organization was suppressed during Mubarak's time in office, but formed the Freedom and Justice Party to contest elections after Mubarak's resignation.
Answer: **Muslim Brotherhood** (accept The **Society of the Muslim Brothers**)
11. The Great Eighteen Chorale Preludes were written for this instrument, as was the "Little" Fugue in G minor. For 10 points each,
[10] Name this instrument, whose manuals are played by hand and whose pedalboards are played with the feet.
Answer: pipe **organ**
[10] This composer of keyboard works like The Art of Fugue was court organist in Weimar when he composed the Great Eighteen Chorale Preludes.
Answer: **Johann Sebastian Bach** (prompt on Bach)
[10] Five organ works by Bach pair this type of quick, virtuosic composition with a fugue; the most famous, BWV 565, is in D minor and is commonly played by the Phantom of the Opera.
Answer: **toccata**
12. The Stoss end is the steeper of the two ends of these features. For 10 points each,
[10] Name this type of elongated hill formed of deposited till.
Answer: **drumlins**
[10] Drumlins, eskers, and cirques are landforms created by these large, moving accumulations of ice and snow.
Answer: **glaciers**
[10] Accumulations of glacial debris are given this name. There are several types of these, including "terminal" and "lateral" types.
Answer: **moraines**
13. A suhoor is taken daily before this event. For 10 points each,
[10] Name this practice that is broken nightly with an iftar. Muslims who observe this ritual must abstain from all nourishment and sexual practices for a prescribed length of time.
Answer: **fasting**
[10] Fasting is practiced as part of the sawm pillar of Islam and practiced during the daylight hours of this ninth and holiest month of the Islamic calendar.
Answer: **Ramadan**
[10] Ramadan culminates in this holiday on the first day of Shawwal, which centers on a large celebratory meal.
Answer: **Eid** al-Fitr (accept **Eid** ul-Fitr)

14. For 10 points each, give the following about plant cells.
[10] This layer of cellulose fibers provides cell structure by functioning as a thick, rigid membrane surrounding the cell.
ANSWER: **cell wall**
[10] These green-colored plastids conduct photosynthesis.
ANSWER: **chloroplasts**
[10] The light-dependent reactions of photosynthesis are carried out in these compartments that are stacked in groups called grana.
ANSWER: **thylakoids**
15. This narrator's next-door neighbor earns the wrath of George Wilson and hosts lavish parties to attract Daisy Buchanan. For 10 points each,
[10] Name this narrator, the cousin of Daisy and college friend of Tom, who lives in a "cardboard bungalow" in West Egg.
Answer: **Nick Carraway** (accept either underlined portion)
[10] Nick Carraway, Jay Gatsby, and George Wilson were created by this Lost Generation author of *Tender is the Night* and *The Great Gatsby*.
Answer: F(rancis) Scott (Key) **Fitzgerald**
[10] In *The Great Gatsby*, George Wilson believes that the "blue and gigantic" eyes of this doctor belong to God, as they peer out from behind a pair of "enormous yellow spectacles" above the Valley of Ashes.
Answer: Doctor T.J. **Eckleburg**
16. The natural log of this number is equal to 1, because this number is the base of the natural logarithm. For 10 points each,
[10] Name this irrational number about equal to 2.71828.
Answer: **e** (accept **Euler's number**; do not accept "Euler's constant")
[10] Jacob Bernoulli discovered *e* by studying the compound form of this concept, the money earned by lending money to a borrower.
Answer: (compound) **interest** (accept **continuously compounded interest**)
[10] *e* can also be calculated by taking this process, as *x* approaches infinity, of the quantity $1 + \frac{1}{x}$ over *x*, quantity raised to the *x* power. In the 19th century, Cauchy [koh-shee] formalized this calculus operation in terms of variables often labeled epsilon and delta.
Answer: **limit**
17. As a result of this declaration, many Huguenot churches were destroyed and hundreds of thousands of refugees scattered across Europe. For 10 points each,
[10] Name this 1685 edict that revoked the Henry of Navarre's Edict of Nantes [NAHNT].
Answer: Edict of **Fontainebleau**
[10] The Edict of Fontainebleau ended religious toleration in this then-Catholic European nation.
Answer: **France**
[10] This French king, nicknamed the Sun King, issued the Edict of Fontainebleau.
Answer: **Louis XIV** [fourteenth] Bourbon (accept **Louis the Great**; prompt on Louis)

18. After the Jayuya Uprising, Oscar Collazo and Griselio Torresola attempted to assassinate this man, leading to the death of police officer Leslie Coffelt. For 10 points each,
[10] Name this U.S. President. The attack came in the middle of his second term of office after he defeated Thomas Dewey in 1948.
Answer: Harry S Truman
[10] Collazo and Torresola were members of the independence movement of this American commonwealth, whose capital is San Juan.
Answer: Puerto Rico
[10] The attack took place at this Washington D.C. residence, at which Truman was staying while the White House was being renovated. This building is the official guest house for visiting foreign heads of state.
Answer: Blair House (prompt on Blair)
19. Sometimes a literary hero just can't catch a break. For 10 points each, name some authors who created pitiful heroes.
[10] This Spanish author wrote about the repeated incarceration of the insane Don Quixote, who believes that he is a knight who must quest with Sancho Panza.
Answer: Miguel de Cervantes
[10] This author adapted a German legend into the story of Heinrich Faust, who tragically woos Gretchen after he sells his soul to Mephistopheles in a quest for knowledge.
Answer: Johann Wolfgang von Goethe
[10] This Frenchman wrote a play about Cyrano de Bergerac, a poet and swordsman who helps Christian woo Roxanne when his own enormous nose ruins his chances with her.
Answer: Edmond Eugène Alexis Rostand
20. A philosopher has to start somewhere, and a good starting point is figuring out if anything actually exists. For 10 points each,
[10] This philosophy holds that the external world, and everyone who lives in it, may only be a figment of the thinker's mind. Its name is derived from the Greek for "self alone."
Answer: solipsism (accept word forms)
[10] In Discourse on Method, Rene Descartes attempted to doubt everything, but reasoned that--at a minimum--the mind of the thinker exists. He expressed that concept via this statement.
Answer: "I think, therefore I am" (accept "Cogito ergo sum;" accept "Je pense, donc je suis")
[10] In *City of God*, this Bishop of Hippo expressed a similar confidence in his own existence by positing "If I am mistaken, I exist." This man described his conversion to Christianity in Confessions.
Answer: Saint Augustine