

Tossups

1. A woman of this name was the sister-in-law and rival of Aedon, a queen of Thebes who accidentally murdered her own daughter. However, the most well-known woman of this name was another queen of Thebes who aroused the ire of the gods when she stated that she was a better woman than Leto, as fourteen children were better than two. FTP, this name, the Greek word for 'sorrow,' identifies the woman whose children were subsequently murdered by Apollo and Artemis and was turned into stone afterwards.

Answer: **Niobe**

2. This class of chemical compounds, when reacted with some acids, can form oxonium compounds. They include the epoxides, and the "crown" class of these compounds surrounds a metal ion. They can be produced through a synthesis named after Williamson, and the ethyl or diethyl form of these is one of the earliest anesthetics known to medicine. FTP, name this class of molecules defined by an oxygen atom between two hydrocarbon chains.

Answer: **Ethers**

3. In this work, Mason City needed a new school building, and the contract was given to a relative of the head of the city council, despite the objections of the county treasurer. When three students are killed as a result of faulty construction, the man who was treasurer becomes a local hero. Over the next several years, he rises to the position of state governor and the center of a powerful political machine. Then it all falls to pieces when he is shot by the brother of his latest affair. The rise and fall of Willie Stark is described in, FTP, this novel by Robert Penn Warren.

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

4. Some attribute frescoes in the High Church at Assisi to this man, but they are probably belong to his teacher, Cimabue [CHI-mah-boo-eh]. In architecture he is remembered best for the bell tower of Florence Cathedral. His most revolutionary work, however, was a series of frescoes including scenes of *Joachim among the Wilderness* and *The Raising of Lazarus*. FTP, identify this Florentine painter who shortly after 1300 broke from Medieval tradition with his frescoes in the Scrovegni, or Arena Chapel.

Answer: **Giotto** di Bondone

5. This plane was originally built in America to Royal Air Force specifications, and the A-36 Apache variant of this plane was the first to see combat. It saw limited use until the RAF found that Merlin engines gave the plane astonishing high-altitude performance and long-range flight capabilities. Adopted by the USA, it filled a crucial role as the only fighter plane that could accompany long-range bombing missions over Germany and Japan. FTP, identify this plane with an equine name.

Answer: **P-51 Mustang** (accept either)

6. One half of this number is the result of the Pippenger Product, and with an irrationality measure of two, it is in the group with the lowest level of transcendentals. In the hat check problem, the probability that none of the hats are in the right boxes approaches one over this value as the number of hats approaches infinity. It can be given by the infinite series of 1 over K factorial, and it is its own derivative. FTP, identify this base of the natural logarithm, a constant whose value is around 2.718.

Answer: **e** (also accept **Napier's constant** or **Euler's constant** ; if they say 2.718, etc., prompt)

7. Born to Mandane, a daughter of the emperor Agasthyes, he rebelled against him and ended the Median Empire, replacing it with one governed by his own people. Later exploits include the Battle of Thymbra, where his forces on camelback defeated Croesus' Lydian cavalry, his death in battle with the Massagetae, and his freeing the Jews from the Babylonian Captivity upon his conquest of that city, sending them back to Israel. FTP, identify this father of Cambyses and founder of the Persian Empire.

Answer: Cyrus the Great or Cyrus II or Kūruš

8. In this work's first part, an unnamed protagonist writes a stream-of-consciousness essay on the human capacity to act against logic and enjoy pain, like a tooth-ache. The second part, titled "A Propos of the Wet Snow," shows a few events in the narrator's life exemplifying his antisocial tendencies. These involve an officer who does not notice him, an argument with three friends, and his painful inability to empathize with the prostitute Liza. FTP, name this Dostoevsky novel, the bitter narrative of a retired civil servant in St. Petersburg.

Answer: Notes from the Underground

9. The fourth of them was hired because "he [would] be a treasure in hard times," but died before the battle began in earnest. The fifth and the last were initially rejected, but manage to join after displays of determination and brashness. The sixth is idolized by the others for his skill and stoic demeanor, and even managed to capture a Tanegashima rifle from the bandit camp without making a sound during a night raid. FTP, this label identifies Kanbei, Gorobei, Shichiroji, Heihachi, Katsushiro, Kyuzou, and Kikuchiyo, the principal characters of a Kurosawa film of the same name.

Answer: The Seven Samurai

10. CW Woodworth first suggested its current use, and Wieschaus, Lewis, and Nusslein-Volhard won a Nobel Prize for their studies of it. During development, its chromosomes enlarge by dividing but remaining attached, creating bar code-like polytene chromosomes. Besides its sex chromosome, it has three autosomes, the third of which is small enough to be largely ignored besides its *eyeless* gene. Most famously used by Thomas Hunt Morgan to demonstrate that genes are the basis of heredity, FTP name this member of the order *Diptera*, commonly referred to as the fruit fly.

Answer: Drosophila melanogaster [accept D. melanogaster; prompt on "fruit fly"]

11. A recent novel by Jon Clinch puts forth the idea that his mother was a black woman, something never suggested by this character's creator. His alcoholic father is found naked and dead in an abandoned brothel, and he himself is thought dead twice, once after escaping from his father to Jackson's Island, and again after staging his own murder. In other adventures, he and his best friend come into possession of a horde of money, and he's adopted by a widow who attempts to "civilize" him. FTP, name this companion of the escaped slave Jim, created by Mark Twain.

Answer: Huckleberry Finn

12. This composer put to music such poems as "In the wondrous month of May" in his song cycle *A Poet's Love*, and he composed only one opera, *Genoveva*. One of his piano works is *Scenes from Childhood*, and he created the alter egos of Florestan and Eusebius. He uses the spelling of his girlfriend's home town of ASCH as a theme for one of his more famous works, while another is a symphony known as the "Rhenish". FTP name this composer of *Carnaval* and the *Spring Symphony*, whose wife Clara was also a noted pianist and composer.

Answer: Robert Schumann

13. A related manuscript, the *Tractatus Coislinianus*, is likely to have been an early outline of the work's second part, of which there are no surviving copies. The opening lines to this work state that all forms of the titular art attempt to create a "representation of life," or mimesis, and goes on to identify and analyze several other mechanisms such as lexis and hamartia. FTP, name this work of Greek philosophy, which along with *Rhetoric*, comprises all of Aristotle's works on aesthetics.

Answer: Poetics

14. The middle length of this river is dominated by two manmade lakes behind the dams of Cahora Bassa and Kariba. Access to this river was the reason Namibia was granted the Caprivi Strip. Near its mouth it receives through the Shire River the waters of Lake Nyasa, or Malawi. It forms much of the Zambia-Zimbabwe border before crossing into Mozambique, where it runs into the Indian Ocean. FTP, name this great river of southern Africa, most famously explored by David Livingstone, who gave its most dramatic point the name of Victoria Falls.

Answer: Zambezi River

15. This politician came to national prominence as director of relief operations for Belgium during World War I. He then served as Secretary of Commerce from 1921-28, and headed the relief operations for the Mississippi Flood of 1927. He defeated Alfred Smith to become president, during which time he signed the Norris-LaGuardia Act dealing with labor disputes, but more infamously signed the Smoot-Hawley Tariff Act, which helped bring on the Great Depression. FTP, name this one-term president who was defeated in 1932 by FDR.

Answer: Herbert Hoover

16. Discovered in March of 1993, it had multiple nuclei and its orbit appeared distressed. When its end came in 1994, observers from Earth to the satellites Voyager and Cassini were watching. It elicited crescent-shaped dark splotches that lasted for months, a change in atmospheric composition as normal layering was disrupted, and global temperature changes when it slammed into the body it had been orbiting. FTP, name this comet, the first to be discovered in orbit of Jupiter, named for its two discoverers who had also together named eight previous ones.

Answer: Shoemaker-Levy 9

17. In April 2007, it was officially announced that it was up for sale. The winning bid was announced in May, with the sale finalized in August. Shortly afterwards Robert Nardelli, former chief executive of Home Depot, was hired as the new CEO. Bidders included investor Kirk Kerkorian and Magna International, but they all lost out to the 7.4 billion dollar bid of Cerberus Capital Management. Still headquartered in Auburn Hills, Michigan, and once led by Lee Iacocca, FTP, name this U.S. car company that was until recently merged with Daimler AG.

Answer: Chrysler Group (also accept Chrysler LLC)

18. It was issued on April 13 and consisted of four texts, the principal one of which contained 90 articles, along with 56 "secret" articles. Though it offered civil liberties, the right to bring grievances to the king, and the right to maintain already-held fortress towns to the religious minority, it didn't allow them to practice their religion inside majority city walls, and they had to follow Catholic marriage restrictions. FTP, name this edict announced by Henri IV in 1598 which provided religious freedom to France's Protestants.

Answer: Edict of Nantes

19. Combining the cases of *Gebhart et al. v. Belton* and *Davis et al. v. County School Board of Prince Edward County* among others, the case's namesake was chosen to lead the plaintiff roster as a legal technique. Declaring that the practice in question "violates the 14th amendment to the U.S. Constitution", it overthrew the earlier decision of *Plessy vs Ferguson*. FTP identify this 1954 court decision which ended the practice of racial segregation in public schools.

Answer: Oliver L. **Brown** et.al. **v.** the **Board** of Education of Topeka (KS) et.al

20. The last four words spoken by this literary character are "the rest is silence." He criticizes his mother for moving "with such dexterity to incestuous sheets" after the murder of his father. Concerning *The Murder of Gonzago*, this character exclaims "The play's the thing wherein I'll catch the conscience of the king." To Rosencrantz, he says "the body is with the king but the king is not with the body" and to Ophelia, he says "get thee to a nunnery." FTP, name this Shakespearean title character who pondered "to be, or not to be."

Answer: **Hamlet**

21. The last name's the same. The Irish engineer Robert devised a namesake equation and roughness constant that model the flow of water through a gravity-driven open channel. The politician from Trinidad and Tobago Patrick has served as his country's Prime Minister since 2001. However, this name is probably most easily recognized in professional football. FTP, name this surname that identifies both Chicago Bears cornerback Ricky and sibling quarterbacks Eli and Peyton.

Answer: **Manning**

Bonuses

1. Identify these laws related to vapor pressure FTPE.

This law relates the fact that the vapor pressure of an ideal solution is equal to the sum of the vapor pressure of each component times its mole fraction.

Answer: **Raoult's Law**

This law states that the concentration of a dissolved gas in solution is proportional to the partial pressure of the gas in equilibrium with the liquid.

Answer: **Henry's Law**

This law, named for its two developers, allows one to calculate vapor pressure at a given temperature provided they know the vapor pressure at another temperature and the heat of vaporization.

Answer: **Clausius-Clapeyron**

2. FTPE, answer the following about a labor incident.

A rally for an eight-hour workday at the McCormick Harvesting Machine Company quickly escalated into this large-scale May 1886 riot.

Answer: **Haymarket Square Riot**

The rally was organized by this labor union, which was founded in Philadelphia by Uriah S. Stephens and led at the time of the riot by Terence Powderly.

Answer: **Knights of Labor**

The Haymarket Square Riot took place in this Midwestern city, which had fifteen years earlier experienced a Great Fire caused by the O'Leary cow.

Answer: **Chicago**

3. Give the titles of these Alfred Hitchcock movies, FTPE.

Arguably his most famous picture, this film with a famous shower scene starred Anthony Perkins and was based off of the crimes of serial killer Ed Gein.

Answer: **Psycho**

A TV remake of this film aired in 1998 starring Christopher Reeve. The original starred James Stewart as a guy who liked to look out the title object, and Grace Kelly.

Answer: **Rear Window**

This film was based on a stage play of the same name, which was, in turn, based on the real-life murderers, Leopold and Loeb. It is named for the material used in the murder.

Answer: **Rope**

4. FTPE, answer the following about genetics.

This Austrian monk discovered that traits are inherited in pairs of genes, and that dominant genes can mask the expression of recessive genes.

Answer: Gregor **Mendel**

This nine letter word refers to the observable properties of an organism which are under genetic control, and is the expression of genotype.

Answer: **phenotype**

Most humans have this many pairs of autosomal chromosomes.

Answer: **22** [In case they ask, autosomal means non-sex chromosomes.]

5. FTPE, Answer the following about the first woman to be elected Prime Minister of a Muslim nation.

A suicide bomber killed more than a hundred when this woman returned home on October 18.

Answer: Benazir **Bhutto**

Identify the Muslim nation in question, which twice elected Bhutto to the Prime Ministership.

Answer: **Pakistan**

As a former democratically elected ruler, her reappearance after years of exile may represent a threat to this General who currently rules Pakistan under military government.

Answer: Pervez **Musharraf**

6. Answer the following about an author FTPE.

This prolific author is known for such works as *The Wings of the Dove*, *The Golden Bowl*, and *Portrait of a Lady*.

Answer: Henry **James**

This Henry James novel describes a love triangle in the title city between a conservative, Basil Ransom, and two feminists, Olive and Verena.

Answer: The **Bostonians**

This ghost story leaves it unclear whether the governess' story is true or a product of her imagination. People dying in this novella include Miss Jessel, Peter Quint, and the boy Miles.

Answer: The **Turn of the Screw**

7. Answer these questions about the artistic legacy of Robert Henri, FTPE.

Henri, who painted realist works depicting urban scenes, organized The Eight, a group of likeminded artists depicting daily life among the urban poor. These artists would later be grouped under this "school."

Answer: **Ash Can** School

A student of Henri, Edward Hopper is most famous for this oil painting depicting a couple and a single man with his back to the viewer, sitting at a diner on the corner of an empty street.

Answer: **Nighthawks**

This artist, also an Henri student, painted street scenes like *Cliff Dwellers*, but more enduring are his paintings of boxing matches like *Both Members of This Club* or *Stag at Sharkey's*.

Answer: George **Bellows**

8. FTPE, name the Mexican ruler from clues.

This man was President of Mexico over eleven separate periods during the 1800's. He failed to stop Texas' rebellion, presided over the disastrous Mexican-American War, and as if that wasn't enough, sold the United States more land in the Gadsden Purchase.

Answer: Antonio López de **Santa Ana**

With the help of Napoleon III, he briefly reigned in Mexico under French auspices before his deposition and execution by the forces of Benito Juárez.

Answer: **Maximiliano** I of Mexico

This current President of Mexico won a controversial election contested by Andrés Manuel López Obrador in 2006. He succeeds Vicente Fox as President and is from the same party, the PAN.

Answer: Felipe de Jesús **Calderón** Hinojosa

9. FTPE, answer the following about Russian geography.

Extending from the Kazakh steppes northward towards the Arctic Circle for 2500 kilometers, this mountain range is one of the oldest geologically. It is also considered the natural border between Europe and Asia.

Answer: **Ural** mountain range

Containing close to 20 percent of the world's surface fresh water, this body of water is also the world's deepest fresh water body. It is located near the beginning of the Yena River.

Answer: Lake **Baikal**

Located on the border between Kazakhstan and Uzbekistan, it is a landlocked sea that does not flow into any other body of water. An environmental disaster, it is heavily polluted and since the 1950s has lost over half of its surface area due to water loss from mismanaged Soviet irrigation projects.

Answer: **Aral** Sea

10. FTPE, answer these questions about Calvinism.

Jean Calvin was a Frenchman, but it was in this Swiss city that he reformed civil and ecclesiastical structures and lived until his death.

Answer: **Geneva**

This book was Calvin's magnum opus.

Answer: **Institutes** of the Christian Religion or **Christianae Religionis Institutio**

Calvinism became the dominant religion in Scotland through the efforts of this reformer, often called the founder of Presbyterianism.

Answer: John **Knox**

11. Identify the following about a poet and his works FTPE

This English poet is known for his verse translation of the *Iliad*, as well as his *Essay on Man* and *Essay on Criticism*.

Answer: Alexander **Pope**

This Alexander Pope poem describes the taking of the title object from Belinda.

Answer: The **Rape of the Lock**

This Pope mock-epic attacks quite a number of his critics, whom he includes in thinly veiled form as the citizens of the kingdom of dullness.

Answer: **Dunciad**

12. Its creation was suggested by Samuel Chotzinoff, head of the NBC Opera Company. FTPE: Identify this one act opera first shown to the world on Christmas Eve 1951 and featuring such characters as Kaspar, Melchior, and Balthazar.

Answer: **Amahl and the Night Visitors**

This composer of *Amahl and the Night Visitors* also composed *The Consul*, *The Old Maid and the Thief*, and *The Saint of Bleecker Street*.

Answer: Gian Carlo **Menotti**

This Menotti opera describes the title girl attending the title social affair.

Answer: **Amelia Goes to the Ball**

13. Pencil and paper ready, 15 seconds per part. Suppose a cannonball is fired out of a cannon with a vertical speed of 50 meters per second. FTPE:

Assuming the acceleration due to gravity is 10 meters per second per second, how long before the cannonball hits the ground, in seconds? Assume it was fired at ground level.

Answer: **10** seconds

What is the maximum height of the ball in its path, in meters?

Answer: **125** meters

Assume the ball has a 10 kilogram mass and it is now fired out of a different cannon whose length is 2 meters. If the cannon is accelerated uniformly and the ball takes one half second to go from rest to exiting the cannon, then what is the force exerted on the ball, in Newtons?

Answer: **160** Newtons ($F = ma$, $m = 10$, $a = (2 \cdot 2) / (1/2)^2$ so $10 \cdot 16 = 160$)

14. Identify these stories by Nathaniel Hawthorne given clues FTPE.

This short story takes place in 17th century Salem, Massachusetts, and has its protagonist going into the woods following the Devil. He sees many fellow townspeople and his wife entering a pact with the Devil.

Answer: **Young Goodman Brown**

Georgiana possess the titular feature, which her scientist-husband Aylmer tries to remove. He gives her a potion to remove the feature, which fades away, and then she dies.

Answer: The **Birthmark**

Set in a Puritan church, Reverend Hooper shows up wearing the titular object. The congregation is freaked out and don't understand its symbolic significance, and later the Reverend dies.

Answer: The **Minister's Black Veil**

15. Answer questions about a bloodless war between a state and a territory of the United States, FTPE.

Name the then territory, which was forced to cede a strip on Lake Erie at its south and given statehood in return in 1836, as well as land in the Upper Peninsula, which turned out to have great mineral wealth.

Answer: **Michigan**

Identify the state which Michigan almost engaged in war, its southeastern neighbor. The rivalry continues in one of college football's most bitter rivalries.

Answer: **Ohio**

Name the city on the Maumee River, now located in the northeast of Ohio, which gives its name to the Strip over which the war was nearly fought and the war itself.

Answer: **Toledo**

16. FTPE, name these works and their author.

The title character in this work is married to a whining hypochondriac, but falls in love with her cousin, Mattie. Together, they try to end their lives by steering their sled into a tree.

Answer: **Ethan Frome**

Lawrence Selden is rejected by Lily Bart for not being rich enough in this novel, by the same author as *Ethan Frome*.

Answer: The **House of Mirth**

She wrote *The House of Mirth* and *Ethan Frome*, along with *The Age of Innocence*.

Answer: Edith **Wharton**

17. Identify the following famous anthropologists FTPE.

This “father of modern anthropology” taught Alfred L. Kroeber, Robert Lowie, and Edward Sapir, among others, at Columbia, and wrote the works *Mind of Primitive Man* and *Race, Language, and Culture*.

Answer: Franz **Boas**

This student of Franz Boas wrote “The Concept of the Guardian Spirit in North America,” *Patterns of Culture*, and *The Chrysanthemum and the Sword*.

Answer: Ruth **Benedict**

This founder of functionalism is noted for works like *Coral Gardens and their Magic* and his study of the Trobriand Islanders in *Argonauts of the Western Pacific*.

Answer: Bronislaw **Malinowski**

18. Identify these things related to the conception of a hero from Greco-Roman mythology, FTPE. After killing his sons in a bout of insanity, this hero had to perform 12 labors commanded by his cousin Eurystheus.

Answer: **Herakles** or **Hercules**

Herakles was the offspring of Zeus with this woman.

Answer: **Alcmene**

To impregnate Alcmene, Zeus disguised himself as this man, who became her husband.

Answer: **Amphitryon**

19. The Cenozoic Era is divided into Epochs. FTPE, given clues identify the epoch described. This epoch’s name, coming from the Greek for “new dawn,” indicates the appearance of the first mammals.

Answer: **Eocene**

This epoch, beginning with the end of the last ice age, continues to the present day.

Answer: **Holocene**

The epoch before the Holocene, this epoch was characterized by massive glaciers. Most of the Paleolithic period of human prehistory occurred during this epoch.

Answer: **Pleistocene**

20. Answer these questions about Léopold Sédar Senghor FTPE.

Senghor served as the first president of this nation upon its 1960 independence.

Answer: **Senegal**

Well respected in France, he was the first African admitted into this body, consisting of 40 “immortels,” which acts as the official authority on the French language, especially in its fight against loanwords.

Answer: L’**Académie française** or the **French Academy**

In the 1930’s, Senghor and other black writers from Africa and the Caribbean, influenced by the Harlem Renaissance, began this movement. Sartre’s “Black Orpheus” called it the antithesis of colonial racism.

Answer: **Négritude**