

TOSSUP 1

Prophesied to be his grandfather's murderer, he was conceived when Zeus appeared as a shower of golden rain to his mother. Later, he was sent on a quest designed to be fatal, but with the help of Hermes, Athena, and some winged sandals, he succeeded. When he returned victorious, he used his trophy to petrify Polydectes. FTP, identify this Greek hero who beheaded Medusa.

Perseus

BONUS 1

Identify these people and things related to Perseus' adventure FTPE.

- 10: King Polydectes admired this woman, Perseus' mother, which is why he wanted Perseus dead.

Danaë

- 10: These three hags had one eye and one tooth between them, and Perseus stole them both to learn some valuable information.

The Gray Sisters or Women, or the Graeae

- 10: On his way home, Perseus rescued and married this woman, who claimed greater beauty than the nereids.

Andromeda

TOSSUP 2

Pencil and paper ready. A 6 ohm resistor is placed in series with two resistors in parallel, one of which has resistance 3 ohms. The total resistance of the circuit is 8 ohms. Remembering that the total resistance of resistors in parallel is equal to the reciprocal of the sum of the reciprocal of the resistances, FTP, give the value of the third resistor.

6 ohms

BONUS 2

Pencil and paper ready. For each of the following circuits, give the total resistance FTPE.

- 10: Two 3 ohm resistors in parallel, in series with two 4 ohm resistors in parallel.

7/2 or 3.5 ohms

- 10: A 12 ohm and a 6 ohm resistor in parallel, in series with a 1 ohm resistor, all in parallel with a 10 ohm resistor.

10/3 ohms

- 10: Six 6 ohm resistors in parallel.

1 ohm

TOSSUP 3

Its origins are unknown, though it became clearly defined after the marriage of its first emperor to Kumaradevi, a princess of the Lichchhavi. Following the marriage, the founder, named after the first emperor of the Mauryan Empire, declared himself the “supreme King of great Kings”. After his death, his son, Sumadra, expanded the empire, which led to its “Golden Age.” FTP, name this empire, which ruled most of India 500 years after the death of Asoka.

Gupta Empire

BONUS 3

Name these rulers of the Gupta Empire FTPE.

- 10: The ruler during what is considered the height of the Gupta Empire.
Chandragupta II
- 10: Chandragupta II’s successor, at the end of his reign invaders began attacking.
Kumaragupta
- 10: He fought the Hunas, or white huns, and his death brought the end of the Gupta Empire.
Skandagupta

TOSSUP 4

Thomas Winter, Thomas Percy, and Christopher Wright were among the key planners of it, along with their leader Robert Catesby. The first step, carried out by Percy, was to acquire lodgings next to the target location and commence digging. A conspirator warned Lord Monteagle not to go to Parliament on the appointed day, but even after learning of this betrayal his fellow conspirators decided to move ahead with the plot. FTP, this describes what 1605 plot in which Guy Fawkes attempted to blow up Parliament and was executed for it?

Gunpowder Plot

BONUS 4

Answer these questions about Guy Fawkes, FTPE.

- 10: Fawkes was brought to this King, whom he tried to kill, at one o’clock in the morning, and defiantly told him that “dangerous diseases require desperate remedies.”
King James I
- 10: Upon his refusal to confess, Fawkes was taken to this home of the Crown Jewels for torture.
Tower of London
- 10: In this dystopian comic book series, later made into a movie of the same name, the title character wears a Guy Fawkes mask.
V For Vendetta

TOSSUP 5

After Mission Control asked that the crew stir the oxygen tanks to prevent stratification, an electrical wire caught fire, increasing the pressure in the tank and caused an oxygen tank to explode. Because of the significant power loss in the service module, the crew would only have been able to return to Earth safely by using the Moon's gravity to propel the spacecraft toward Earth. They were forced to move into the lunar module to save energy in the command module. FTP, identify this ill-fated mission to the moon beginning on April 13th, 1970.

Apollo 13

BONUS 5

FTPE, name the causes of these other space disasters.

- 10: While training at the launchpad for Apollo 1, this caused a fire that quickly spread throughout the oxygen-filled capsule, killing astronauts Gus Grissom, Ed White and Roger Chafee.

Spark from a poorly insulated wire (accept equivalents)

- 10: After Grissom's splashdown on Liberty Bell 7 six years earlier, the explosive bolts on this piece of equipment this exploded too early, sinking the spacecraft. However, Grissom was able to escape and was rescued before he drowned.

Hatch or Hatch cover

- 10: The Challenger exploded shortly after liftoff in 1986 after low temperatures before the launch caused this part on the right Solid Rocket Booster to deform, enabling hot gases to escape.

O-ring

TOSSUP 6

In 1991 it developed a new constitution, forming a unicameral parliament. Government policies are determined by the Politburo and Central Committee. Its history can be traced to the kingdom of Lan Xang in the 14th century and was then taken over by the Siamese in the 18th century. After a Japanese occupation during World War II, it became a colony under France. It gained independence in 1949 and was established as a country in 1975 by Pathet Lao. FTP, name this landlocked socialist republic in South-Eastern Asian.

Laos

BONUS 6

FTPE, name these other South-Eastern Asian by the border they share with Laos. For example, the answer to "North" would be China.

- 10: East

Vietnam

- 10: South

Cambodia

- 10: West
Thailand

TOSSUP 7

Mr. Turkle and Colonel Matterson are minor characters. The protagonist is widely considered to be a Christ-figure despite having committed crimes including battery and statutory rape. Important parts of the book include the time a party of characters goes fishing, the time that the antagonist takes away the TV privileges of the characters, and when Billy Bibbit commits suicide near the end. Other important characters include Harding, Cheswick, and the "black boys." FTP, name this novel that takes place in an Oregon insane asylum written by Ken Kesey.

One Flew Over the Cuckoo's Nest

BONUS 7

FTPE, name these characters from One Flew Over the Cuckoo's Nest :

- 10: This man is the protagonist who becomes the leader of the ward, he was played by Jack Nicholson in the movie version.
Randle Patrick McMurphy
- 10: She is the antagonist who, for much of the book, wields dictatorial power.
Nurse Ratched or Big Nurse
- 10: This Indian is the narrator of the book
Chief Bromden (either is acceptable)

TOSSUP 8

His employer is a rich, foolish, post World War I bachelor. He uses his immense knowledge to get his master out of tricky situations, which are usually unsuitable engagements. A member of the Junior Ganymede Club, he writes down all of his employer Bertie's wrongdoings. Stephen Fry and Dennis Price have both played him on TV. This is, FTP, what memorable P.G. Wodehouse character, butler to Bertie Wooster?

Jeeves

BONUS 8

Answer the following about critics and fans of P.G. Wodehouse.

- 10: This author of the Winnie the Pooh books was foremost among Wodehouse's critics.
A.A. Milne
- 10: This English satirist authored "Brideshead Revisited" and was Wodehouse's staunchest supporter.
Evelyn Waugh

- 10: This British author, amateur musician, and radio comedian and author of a five-book trilogy cites Wodehouse as a primary influence on his work.

Douglas Adams

TOSSUP 9

He has indeed broken the law, for example burgling the house of Charles Augustus Milverton during an attempt to preserve Eva Blackwell's honor. Apparently he charges on his clients' ability to pay; the royal houses of Scandinavia and France paid him enough to retire handsomely, but he would also work for local pawnbrokers and debutantes. He uses a riding-crop as a weapon normally, but also shot an Andaman Islander in an attempt to retrieve the Agra treasure of the Sholtos. FTP name this literary detective from works by Sir Arthur Conan Doyle, who lives at 221B Baker Street.

Sherlock Holmes

BONUS 9

FTPE given a description of a Holmes case, give the work in which it appears.

- 10: A large mastiff preys upon the family of a country squire in Dartmoor.

The Hound of the Baskervilles

- 10: Holmes chases Dr. James Moriarty across France to Switzerland; it culminates in a fight in which both fall over Reichenbach Falls.

The Final Problem

- 10: A remnant of the Ku Klux Klan visits vengeance on the family of one of its former members. Holmes is unable to defeat them as they are lost at sea before they can be arrested.

The Five Orange Pips

TOSSUP 10

Nouns are inflected so much that theoretically, one noun could have over 450,000 different inflections. Up to 1964, it had no standard orthography. Its standardized dialect is known as "Batua", meaning "unified" in that language. Links have been established between it and the Aquitanian language, which was spoken in roughly the same region. FTP, name this language spoken in the Pyrenees between Spain and France, unrelated to the neighboring Indo-European languages.

Basque or Euskara

BONUS 10

FTPE name these other language isolates.

10: The peninsula containing most of Basque Country is named after this civilization and language, spoken from the seventh to first century BCE.

Iberian

10: This language, spoken by 78 million people worldwide, may be a member of the hypothetical group of Altaic languages. Dialects of it include Hamgyong and Gyeongsang.

Korean

10: This language is spoken in the island of Hokkaido, by its namesake indigenous people of Japan.

Ainu

TOSSUP 11

Some of his earliest works were derived from Hindu traditions, for which he taught himself Sanskrit in order to translate his source material himself. An extensive traveler, he covered much of Europe and parts of North Africa, engaging in debates about music with the locals. His works are not well known in the present day with the exception of a single suite that has been extensively recorded and is often used in modern music. FTP, name this British composer, creator of the seven-part suite The Planets.

Gustav Holst

BONUS 11

Holst's The Planets included seven parts. Each part had a description attached to it; for example, Venus is the Bringer of Peace. FTPE, give those descriptions.

10: Mars
The Bringer of War

10: Jupiter
The Bringer of Jollity

10: Uranus
The Mystic

TOSSUP 12

Originally the process used osmium and uranium catalysts, but now iron III is used for its low cost. The process is reversible, so Le Chatelier's Principle applies. Because it is also exothermic, it produces more reactant at lower temperatures. In the forward reaction there are four moles of gas on the reactant side, three of hydrogen and one of nitrogen, and two on the product side, so high pressure would create more of the desired product. FTP, name this process developed by a namesake German chemist that is used to synthesize ammonia.

Haber-Bosch process

BONUS 12

FTPE name these other chemical processes.

10: This process converts ammonia, usually from the Haber process, to nitric acid.

Ostwald process

10: This organometallic reaction helps to form bonds between carbon and itself or atoms that are not carbon or hydrogen.

Grignard reaction

10: This major industrial process produces aluminum from alumina and cryolite.

Hall-Heroult process

TOSSUP 13

Seeing the potential benefit in the Khwarezmian Empire as a trading partner, he dispatched a 500-man caravan there to establish a good relationship. Unluckily for Khwarezm, the governor of Otrar had the caravan attacked and looted, prompting a campaign ranked as one of the bloodiest and most efficient in history, taking only two years to wipe out that Empire. This was the penultimate conquest of a career that saw the unification of the various steppe tribes of Asia and the seizure of most of China. FTP name this Great Captain of History, first Khagan of the Mongol Empire.

Genghis Khan (accept Temujin)

BONUS 13

FTPE name these successor states of the Mongol Empire.

10: They ruled Persia and the former Khwarezmian lands for a hundred years; Tamurlane briefly used their state as an excuse for his conquests.

Il-Khanate (accept variants)

10: It lasted from its establishment in southern Russia in the 1240s in various forms through domination by first the Ottomans and then Russia until 1783.

Khanate of the Golden Horde

10: The Central Asian successor state, it lasted until 1369, when Tamerlane conquered it during his rampage. It was named after its first Khan, the second son of Genghis Khan.

Chagatai Khanate (accept variant pronunciations)

TOSSUP 14

She was educated at home, and at 15 started teaching school. Her most notable antebellum achievement was the establishment of a free public school in Bordentown, New Jersey. Her only prewar medical experience came when she nursed an invalid brother and her only formal Civil War connection with any organization was when she served as superintendent of nurses in Maj. Gen. Benjamin F. Butler's command. As a result of her campaigning, the United States signed the Geneva Convention. FTP, name this woman who in 1881 founded the American Red Cross.

Clara Barton

BONUS 14

FTPE, name these individuals for whom, like Barton, rest stops are named on the New Jersey Turnpike:

- 10: He was an assistant high school football coach in Englewood, New Jersey, but is better known for leading the Green Bay Packers to five league titles and two Super Bowls:

Vince Lombardi

- 10: This novelist was born in New Jersey but is best known for frontier adventures such as *The Last of the Mohicans* :

James Fenimore Cooper

- 10: This man was living in Mahwah, New Jersey when he wrote his best-known poem, "Trees".

Joyce Kilmer

TOSSUP 15

He was born into a very multicultural family; his heritage included British, Spanish, and Portuguese, and he was bilingual from childhood. He translated many famous works into Spanish, by such authors as Poe, Browne, Kipling, Hesse, and Woolf. He became blind due to glaucoma, and his most famous works were mostly written after he became completely blind. FTP, name this famous Argentine writer, author of such works as *The Library of Babel* and *The Book of Sand*.

Jorge Luis Borges

BONUS 15

Borges' style was sometimes described as "magic realism". FTPE, name these other "magic realist" authors from works.

- 10: His unfinished works include *The Trial* and *The Castle* .

Franz Kafka

- 10: Works include *The Moor's Last Sigh* , *Shame* , and *Midnight's Children* .

Salman Rushdie

- 10: Works include *The Green House* , *The Time of the Hero* , and *Aunt Julia and the Scriptwriter* .

Mario Vargas Llosa

TOSSUP 16

Born in Nice, France in 1857, this psychologist abandoned his goal of obtaining a medical degree when he dropped out of college. He began the work which made him famous by studying the cognitive ability of his young daughters. At the Sorbonne he studied memory, thinking, handwriting, and perception. In 1904 he began work on developing a test to identify students who needed special education because of their low level of intellectual functioning. FTP, name this man who, with his colleague, Theodore Simon, published the first intelligence scale in 1905.

Alfred Binet

BONUS 16

FTPE, identify these milestones in educational testing:

- 10: This organization was founded in 1900 by leaders of Harvard University and Columbia University to create a standard exam for all colleges:
College Entrance Examination Board
- 10: This multiple-choice exam was first administered in 1926 as a fast way of testing college applicants:
SAT
- 10: This group was founded in 1947 to design and administer the SAT and other standardized tests:
Educational Testing Service

TOSSUP 17

Although it is believed to be zoonotic, no animal carrier has yet been confirmed, but it is thought that the fruit bat is a likely reservoir. Since no treatment is currently available, it is classified as a bioterrorism agent by the CDC. Recent outbreaks of this virus have been in Reston, Virginia, and also in Sudan and Zaire. FTP, name this hemorrhagic fever, described in Richard Preston's "The Hot Zone".

Ebola virus

BONUS 17

BONUS FTPE name the described hemorrhagic fever.

- 10: This virus, belonging to the Arenaviridae family, is spread from rodents to man. It is endemic in West African countries.
Lassa fever
- 10: In 2005 an outbreak of this virus in Angola attracted press attention. It is named after a German town.
Marburg virus
- 10: This virus belongs to the Bunyavirus family. Its name comes from the river where it was first discovered.
Hantavirus

TOSSUP 18

Pencil and paper ready. A student writes out the binomial expansion of $(x + 1)^8$, and wants to determine the sum of the coefficients of that expansion. One way of solving this problem is to remember the Binomial Theorem, and apply the simple formula for summing those coefficients. A slightly less clever solution, though, would be to look at the sum of the coefficients of $(x + 1)^2$ and $(x + 1)^3$ and find a pattern. FTP what is the sum of the coefficients of the expansion of $(x + 1)^8$? You will have 10 seconds.

256 (or 2^8)

BONUS 18

FTPE, find the desired value. You will have 10 seconds per part.

10: The coefficient of x^3 in the expansion of $(x + 1)^4$.

4

10: The coefficient of x^3 in the expansion of $(2x + 1)^4$.

32

10: The coefficient of x^3 in the expansion of $(3x + 2)^4$.

216

TOSSUP 19

It represented a major shift in style for its artist. Though the palette is as restricted as usual, the lines criss-crossing its canvas are comparatively numerous, and aren't black. Instead, they are composed of blocks of red, yellow, and blue, the colors the artist previously reserved for larger fields of color. FTP, identify this painting, the last completed work of Piet Mondrian.

Broadway Boogie Woogie

BONUS 19

Identify these art movements and artists related to the Netherlands FTPE.

10: Mondrian was the most famous artist of this movement, which he helped to found in the Netherlands in 1917. Its works attempt to reveal the underlying order of the world.

De Stijl [duh style] (accept **neoplasticism**)

10: Theo van Doesburg was the principal Dutch exponent of this absurdist cultural movement, which originated in Zurich under the guidance of the likes of Tristan Tzara and Hans Arp.

Dada(ism)

10: This Netherlander is best known for his tessellations and works containing optical illusions like Waterfall .

M(aurits) C(ornelis) Escher

TOSSUP 20

Wind Cave National Park is located in this state, as well as the JewelCave and Fossil Cycad National Monuments. The Belle Fourche dam harnesses the Missouri River for irrigation and hydroelectricity, whilst the Angosturadam is largely used for flood control on the Cheyenne. The Crow Creek and Lower Brule Indian reservations are also in, FTP, the state whose capital is Pierre.

South Dakota

BONUS 20

For ten points each, name these other northwestern states.

10: This state, nicknamed the "beaver state", is directly above California with Salem as its capital.

Oregon

10: This is the least populous state, located to the south of Montana with the capital at Cheyenne.

Wyoming

10: This is the most northwest of the states with Olympia, Tacoma, and Seattle being its principal cities.

Washington