

The Questions Concerning Technology
By WB
Round 5

1. **Historical examples of these machines include the Thistle and the Murchland. One example of these machines makes use of low stress I-flow boxes, brushes to clean the target, and the 4effect pulsation system. That machine which uses automated 3D targeting is the Astronaut and is made by Lely. In one of the most influential examples of Colvin science, L.O. Colvin developed a 4 part vacuum utilizing version of this machine. The product produced by these machines can be studied using the Babcock test. It's not a turbine nor the machine that is used on the product of this machine, but Gustaf de Laval made his name and money by designing this type of device. One ointment used to minimize the damage caused by these machines is Bag Balm. For these devices to work properly, an oxytocin releasing stimulus must occur which triggers myoeipithelial cells to push liquid into the target's ducts. The product of these machines is run through a separator, then pasteurized. For 10 points, name these devices that extract a certain liquid from the udders of cows.**

ANSWER: milking machine

2. **Read and Corneil dubbed the study of this problem a “disease.” One fast program for handling instances of this problem is Nauty. One algorithm for solving this problem in the case of restricted multiplicity was given by Leighton and Miller, and in general it is solved by the Babai-Luks-Zemlyachenko algorithm. One early failed line of research to solve this problem reduced this problem to eigenvalue spectra and this problem is reducible to S_n case of the hidden subgroup problem. This problem is in the intersection of NP and coAM. This problem can be reduced to finding an automorphism group for the object in question. Like factoring, this problem is neither known to be in P nor NP-complete. For 10 points, name this problem of determining whether there is a 1 to 1 structure preserving map between two instances of a mathematical structure consisting of nodes and edges.**

ANSWER: graph isomorphism

3. **A different set of ships with this name were used against rebels in the Battle of Antelope Nose during the reign of Pepi I. The capstans on these ships had an unusual ball bearing like construction with shafts coming off the balls. It used to be believed that these ships had bucket chain hoists, but others think these to be the earliest known ships to use cranks handles. One iron anchor used on this ships was sheathed in wood and had a movable iron stock lockable by key. It has been proposed that they were floating temples to Isis. These objects were recovered by Guido Ucelli, however they were destroyed during WWII by the Germans. For 15 points, name these two giant ships of Caligula that were found in an Italian lake.**

ANSWER: Nemi Ships

4. **During the design of one early model of this product code, one red component had to be labeled as “magenta” to make it through its company's Corporate Design Program because red symbolized “Emergency Power Off.” The first model officially in this STILL EXTANT product line used Go's PenPoint platform. Since early models of this product were black and not white, the Germans put the disclaimer “This Product Not For Office Use” on imports of these machines' manual. The 755CDV version of this device had a built in projector. The name of this product came from the writing on the cover of a small book that Denny Wainwright had been keeping in his shirt pocket for 30 years. The visual design of early versions of this product was inspired by a Bento-Bako, which is a Japanese lunchbox. The first successful product in this line had an overall design created by Kazuhiko Yamazaki, Tom Hardy, and Richard Sapper. These were the first computers to include a TrackPoint, also known as a pointing stick, on the keyboard. Model families of this computer include the X tablet series and the Edge. While it is not a Vaio, it does have a T series. This product line which was launched in 1992 is today made by Lenovo. For 10 points, name this line of notebooks that used to be a product of IBM.**

ANSWER: Lenovo Thinkpad [or IBM Thinkpad]

5. **These weapons used to be equipped with D37D computers, but the computers have since been replaced. This weapon system was upgraded in the Rivet MILE program. In the early 1980s, a loaned one of these devices was converted into the Conestoga 1. Until the the mid 2000s, this weapon system used the W62 ordinance, but that has since been replaced with converted W87s from a now defunct project. This weapon system is the primary focus of the Malmstrom and F.E. Warren Air Force bases. Since the 2005 deactivation of the larger LGM-118A Peacekeeper, this is the only operational land based weapon system of its type used by the U.S. Military. They have a range of over 7,000 miles and use a Thiokol first stage rocket engine. The current G type can carry MIRVs. For 10 points, name this American land based ICBM.**

ANSWER: LGM-30G Minuteman III

6. **This company's smart card brand is FeliCa. This company recently unveiled an iPod dock that uses magnetic fluid speakers. The demonstration of one this company's products to the press consisted of young people using the product while riding tandem bicycles. An effort to figure out what was causing failures in this company's 2T7 transistor inadvertently led to the discovery of the tunneling diode. One landmark product in this company's history was the TR-63. This company's media management software is SonicStage. Until 2012, this company's CEO was Howard Stringer. One subsidiary of this company sold CDs with the Extended Copy Protection rootkit. Until recently this company had a joint mobile phone venture with Ericsson. This company's line of personal audio players is the Walkman. For 10 points, name this maker of VAIO computers and the Playstation 3.**

ANSWER: Sony

7. **One structure created to enable this behavior had Qj, Qk, Vj, and Vk fields and would write results to the Common Data Bus. The introduction of this behavior into one architecture led to the invention of reservation stations which allows for register renaming. Another complementary technique for accomplishing this adds a buffer called ROB. This functionality can be accomplished through implementations of Tomasulo's algorithm. This can be done through scoreboard. The use of this technique can introduce WAR and WAW hazards. At least the first few generations of Intel's Atom processors do not have this feature and this technique can help avoid pipeline stalls. For 10 points, name this behavior where the processor does not necessarily follow the arrangement of instructions given by the compiler.**

ANSWER: dynamic scheduling [or out of order execution; or hardware speculative execution]

8. **This man made a deal to drop an investigation of the International Telephone and Telegraph in exchange for financial help. Thomas Paine and Lee DuBridge served on this man's version of the Space Task Group. In one conversation, this man responds with "Well, um" to the declaration that houses never go out of date and in that conversation this man is told "But as you know, we don't beat flies with our nostrils! In 42 years we've made progress." In that conversation, this man compares developments in "color television" to developments in rocket technology. One of this man's possessions was supposedly damaged by a Uher 5000 when his minion pressed a foot pedal while answering a call. This man claimed that "careless nuisances and misuses of technology" have damaged the environment leading him to create the EPA. For 10 points, name this man who had a voice activated recorder installed in the Oval Office and was hurt in his 1960 run for president because he had to appear on television.**

ANSWER: Richard Nixon

9. **On this piece of space hardware's blog, you can read a poem by Jonathan Taylor titled "History Lesson" and all of the poems from a student poetry contest dedicated to this device. This device was originally proposed by Prof. R. Giacconi and Dr. H. Tananbaum in 1976. This craft discovered that sun like stars in the Orion Nebula can undergo very power flares. It was the first to observe long strands of hot gas within the Hydra Cluster's gas cloud. It was launched on STS-93, the first shuttle mission commanded by a woman, namely Eileen Collins. Spectrometers on this craft include HETG, LETG, and the Advanced CCD Imaging Spectrometer. This observatory is similar in aim to the European Newton, which was launched around the same time. Its image of pulsar PSR B1509-58 resembles a giant blue hand reaching out onto the heavens. This observatory is useful in observing black holes because the gas falling into a black hole emits the type of radiation that this device observes. For 10 points, name this X-ray telescope named for an Indian-American astrophysicist.**

ANSWER: Chandra X-ray Observatory

10. **WSJ columnist Dan Neil lost a bet to the founder of this company about whether this company would be able to launch one of its products on time. In 2010, it bought the NUMMI plant, which is now its main production facility. This company at one point was planning to launch a product code named "Blue Star" in 2015. This company's former CEO, Martin Eberhard, sued this company over just who found it. One of this company's products has recently stopped being made due to the company's supply of Lotus Elise gliders being depleted. This company teamed up with Toyota on the 2012 RAV4 EV. This company's currently makes the Model-S and it used to make the Roadster. For 10 points, name this electric car company founded by Elon Musk.**

ANSWER: Tesla Motors

11. **Riskbitz, the *Onion* of the insurance industry, once did a satirical article where a dolphin named Dennis was made chief underwriting officer of an agent company named for one of these personages. Chellis Glendinning wrote a 1990 treatise about these people. A 1996 congress of these people was addressed by**

Kirkpatrick Sale. Thomas Pynchon wrote a 1984 essay for the New York Review of Books titled “Is it O.K. to be a” this. In the novel T2: Storm Rising, Ron Labane establishes a foundation to advance the goals of these people. William Horsfal was murdered by these people. It's pretty clear from his manifesto that the Unabomber was a modern day one of these people. In response to their action, the Frame Breaking Act was passed. For 10 points, name these modern followers of General Ned who hate technology.

ANSWER: neoluddite

12. The company that produces this platform runs the Cody Challenge, an online game centered around users' skills in using this platform. Other online community resources for this platform include the generically named “File Exchange” and the “Link Exchange.” Functional programming style “map” operations can be accomplished in this proprietary platform using arrayfun. Fig files are a special file format used by this platform for storing graphical output. GNU Octave's programming environment is designed to be at least partially compatible with this program. Simulink is adds simulation tools to this platform. Many of the various addons for this program are organized into toolboxes. This platform's programming language is built around the manipulation of matrices. For 10 points, name this numeric programming platform made by Mathworks.

ANSWER: Matlab

13. Samuel C. Lister discovered a method for using the waste made in the production of this substance. Thomas and John Lombe built the first industrial facility for processing this substance in England. In the late 1800s, Patterson, NJ was the largest producer of this substance in the U.S. . The Byzantine Empire learned to produce this substance through the effort of two monks with hollowed out staffs. Dr. Randy Lewis is the godfather of the science of making a variant of this material using goats. This substance was replaced in many applications by a discovery of Wallace H. Carothers . Joseph Marie Jacquard developed a machine to automate the assembly of goods made using this material. The commercial production of this material relies on *Bombyx mori* and Mulberry leaves. Legendarily, Leizu was the first to learn how to master this material after a cocoon fell in her tea. For 10 points, name this fiber that lends its name to a historical commercial route in Central Asia.

ANSWER: silk

14. The CFO of the company that made this product was once a member of the End Timers, a Lake City Florida based cult that banned pets because they could be reservoirs of demons. One of the men who came up with this product later started Xero Mobile. The company responsible for this device was originally called Floor Décor. The history of this product featured a police helicopter search for a man named Dietrich and an attempt by the police to visit the address of one Karney, but Karney's address turned out to be for a luxury yacht that had just left for Ireland. One of the executives behind this product was the head of the anti-terrorism division of a private police-force and elderly people transport group called the San Gabriel Valley Transit Authority. The original premise behind this device was that it would allow parents to track their children 24/7 and one proposed program for this product was *Momma, Can I Mow the Lawn?* One executive of the company that made this product crashed a Ferrari Enzo traveling at 200 mph that he claimed to own but in fact didn't. That executive behind this device was Stefan Eriksson, a leader of the Uppsala Mafia. For 10 points, name this disastrous Tiger Telematics GPS containing, ad supported hand held gaming platform.

ANSWER: Gizmondo

15. In an SDRAM block, one of these devices takes as input the refresh counter and the row address latch. One common way to implement a 8 bit barrel shifter is to use five stages of these devices. The 74157 is one of these devices. One can implement A XOR B using this device by using B, not B as the inputs and A as a special type of line. A minimal one of these can be created from two tristate buffers and a not gate, which corresponds to the equation Y equals D sub 0 S or D sub one not S. They act as the opposite of a n to 2^n decoder. These are depicted as trapezoids on digital circuit diagrams. They take in a set of input lines along with control or select lines. For 10 points, name these digital logic devices that are used to choose from a set of inputs, thus combining multiple inputs into a single output.

ANSWER: multiplexer [or mux; prompt on encoder; prompt on selector]

16. Alex Zuccarelli created a t-shirt based on this occurrence which is available for purchase at redbubble.com. It would at seem that at one point Alex Zuccarelli ran a message board dedication to this type of event, but my(Will) attempts to access it resulted in a server error. A Guy Collins Youtube video about this occurrence includes a man being assaulted while eating cereal and a violent overthrow of society. A band by this name features the vocals of Kasia Elizabeth and Tessa Marie. One theory behind the origin of this occurrence is that it was invented to cover up for the shame of alcoholism caused ends. This occurrence is why one

household object has a timer in a certain country. The two proposed mechanisms of this are hypothermia and asphyxiation. For 10 points, name this Korean belief that a household rotator of air can terminate life.

ANSWER: fan death

17. **One line of these devices can be extended and modified through Services Ready Engine modules. High performance examples of these machines and their less sophisticated brothers use ternary content addressable memory. A scheme based on tries of bitmaps and named for Lulea is used on some of these devices.** The CRS-1 is one of the highest throughput examples of these machines. It's not an exclusively Apple product, but many of these devices run JUNOS or IOS. These machines can coordinate their actions through BGP. These devices can perform NAT to handle many devices when there is a limited number of a certain identifier. These devices maintain a table with entries like gateway, interface, and netmask. Consumer brands of these devices include D-Link, Netgear, and Linksys. For 10 points, name these devices that can maneuver packets between two IP networks.
ANSWER: Router

18. **One method for doing this on on 8 by 8 blocks of canonical gray coding is bit plane complexity segmentation. Gustavus Simons introduced the Prisoner's Problem to study this action. A simple digital method for doing this is least significant bit insertion. Gerolamo Cardano developed a grille of rectangular holes in paper for doing this. This act takes its name from a three volume work on communicating with supernatural beings by Trithemius. OpenPuff is a program for doing the "deniable" form of this practice using many different file formats. This practice is similar to Rivest's chaffing and winnowing, but unlike c&w the adversary in this case will not know this is happening. One physical way to do this is microdots. This includes jargon codes and semagrams are a form of this based on images or typography. Invisible watermarking is a form of this action.** For 10 points, name this act of hiding a message in a picture or text.
ANSWER: steganography [prompt on hidden messages]

19. **This technology was developed by John Parsons and Frank Stulen. APT was a language for controlling these systems. They can be controlled by G codes. The degree to which these systems can move determines whether they are point to point, contouring, or straight cut.** This system is composed of a MCU, a part program, and processing equipment. Machining Centers are machines based on this technology that can change their own parts. CAM is a form of this using more modern computers and electronics. Nowadays, such systems can take in designs generated by CAD. For 10 points, name these systems for directing factory machines using alphanumeric coding.
ANSWER: Numerical Control

20. **One company in this industry launched its service when its CEO pushed a button while sitting in what was dubbed the "Captain Kirk Chair." One of the earliest of these services was launched in Africa by WorldSpace. Until 2007, Hugh Panero was CEO of one company in this industry. Quoi de Neuf is a Canadian targeted part of one of these services. Machines that work with these services include the Sportster and Onyx.** One iPhone accessory that taps into one of these services is SkyDock. The largest provider in this industry divides its service into sections like bpm, Watercolors, Octane, and Symphony Hall. Technically Muzak is one of these services and another of these services uses two geosynchronous platforms named Rock and Roll. For 10 points, name this delivery of music into your car from outer-space exemplified by XmSirius.
ANSWER: Satellite Radio [prompt on digital audio radio service]

Tiebreaker:

This technology was exactly defined and its name coined by a textile mill physicist, Stuart Cramer. A Wifi based control unit for these is offered by Friederich, a maker of these machines. On *Community*, Troy Barnes is recruited by an annex that specializes in the repair of this technology. These machines have a compressor, condenser, coils, and a blower. It was invented by Willis Carrier. For 10 points, name this technology that keeps houses cool.

ANSWER: air conditioning