

The Questions Concerning Technology
By WB
Round 9

1. **One legend about this product's origin states that it was invented by DeMirco on a request of Charles I. Nancy Johnson was the first to receive an American patent on devices that make this product. One recent advance in this product is the addition of AFP-type IIIs to limit formation of undesirable structures. Industrial production of this is carried out in a barrel shaped device with internal surface scrapers. Carboxymethyl cellulose is a commonly used stabilizer in this product and Polysorbate 80 is often added as an emulsifier. Margaret Thatcher invented a method that produces an inferior version of this product by including more air. One approach for making this product at home uses rock salt to alter the colligative properties of H₂O. For 10 points, name this product that comes in varieties like Moose Tracks, Rocky Road, and Vanilla.**

ANSWER: Ice Cream

2. **After coming to this man's lab and experimenting with the project this man started, Ken Kesey declared "It's the next thing after acid." Evans created the journal feature in one of this man's greater accomplishments. In the mid 2000s, this man worked on the Hyperscope project to re-implement one of his earlier creations on the web. He is not Tim Berners-Lee, but he claimed to be inspired by Vannevar Bush's essay "As We May Think." He started the Augment lab at Stanford. Many of this man's ideas were implemented in the NLS computer system. Bill English collaborated with this man in his most notable accomplishment. This man demonstrated video conferencing and hypertext during "The Mother of All Demos." This man invented a device that would later be a critical part of XEROX PARC's work into GUIs. For 10 points, name this inventor of the mouse.**

ANSWER: Douglas Engelbart

3. **One method for doing this task is based on the fact that the Perona-Malik diffusion equation preserves the objects that are the goal of this action. One object used to perform is based on a 3 by 3 matrix with entries $\begin{bmatrix} 1 & 2 & 1 \\ 0 & 0 & 0 \\ -1 & -2 & -1 \end{bmatrix}$. The Marr-Hildreth algorithm for this action looks for zero crossings. Operators used to perform this task include the Prewitt and the Sobel. A Gaussian filter is applied in the first step of Canny's method for doing this. Strategies for performing this action are based on looking for gradients that exceed a threshold in an image. For 10 points, name this task of finding demarcations within an image.**

ANSWER: Edge detection

4. **After Dilbert creates the Blue Duck on an episode of the TV show *Dilbert*, Dilbert is kidnapped by this man. One version of this man is forced to lend his skills to Tau while being kept in a place he believe to be America. Scaroth tries to make money off of this man's labor in the Doctor Who episode *City of Death*. This man creates an alchemy forge that is sought after by Mayflower Industries in film *Hudson Hawk*. While living on Holberg 917G he creates the android Rayna and goes by the name Flint. On Futurama, this inventor creates the Macchina Magnifica in a plot to get revenge on the smarter members of his species. For 10 points, name this Renaissance Man that drew sketches of flying machines.**

ANSWER: Leonardo da Vinci [accept either]

5. **The results this company provides are based on it what it calls "statistical impossible phrases." Bill Maher had a brief talk show run by this company called Fishbowl. The CEO of this company also runs a space company called Blue Origin. It owns IMDB. This company acquired maker of robotic pickers, Kiva Systems. Cloud services this company offers include EC2 and S3. In a bizarre July 2012 PR move, this company released a letter about their intent to pay up for up to \$2000 of vocational training for its warehouse employees. It owns Abebooks and Zappos. This company gives access to its instant video selection to subscribers of its Prime program. For 10 points, name this Jeff Bezos run online retailer.**

ANSWER: Amazon.com

6. **Scrambling functions were introduced to show that this statement is false with regards to a random oracle. This statement is incompatible with a proposed property of certain k-creative sets that was put forth by the Joseph-Young conjecture. This statement was shown to apply to all paddable languages of a certain class. For 10 points, name this unsolved conjecture about whether all NP-complete sets are polynomial time pairwise isomorphic.**

ANSWER: Berman-Hartmanis Isomorphism Conjecture

7. Unlike other mining devices made by their respective companies, the Caterpillar Command 793F and the Komatsu AHS fall into this class of machines. These machines have control systems based on SLAM methods. Ernst Dickmanns and the Prometheus Project created one of these in the 1980s called VaMP. Sebastian Thrun is an expert in the construction of these machines that often are equipped with laser radar. A red or green identification placard with an infinity symbol is now required to be attached to these machines in Nevada. The U.S. Government once sponsored a series of contests for these machines known as the DARPA Grand Challenge. Recently Google has been experimenting with Prius based versions of these transports. For 10 points, name these land transports that don't need people.

ANSWER: Driverless Car [or Autonomous Vehicle; accept equivalents]

8. The construction of this scientific endeavor had to be halted because mammoth bones were found on site. Initially, work on the project using a VISAR showed that the fourth induced wave was slower than predicted by HYDRA simulations. This experiment runs 192 lines through plasma electrode pockels cell amplifiers. The object at the center of this experiment has a Germanium doped CH ablator shell. The predecessor to this project was the Nova project during the 80s. This project has been conducting shocked timing experiments on very cold holoraums. This center recently fired a 500 trillion watt laser burst at a small amount of deuterium. For 10 points, name this American inertial confinement fusion research program at Lawrence Livermore.

ANSWER: National Ignition Facility

9. After this man's death, his good friend Mr. Gooch said of him, "great things are not done by those who sit down and count the cost of every thought and act." Dr. Edmund Parkes was the superintendent of the Renkioi, a prefabricated wooden hospital designed by this gentleman. His father was inspired by a shipworm to invent the Tunneling shield, which was used to build the first transportation tunnel under a river. He was once strapped to a table and rotated upside down in an effort to dislodge a coin that had gotten stuck in a magic trick. In the 2012 Olympic Opening Ceremonies, Kenneth Branagh delivered a speech from *The Tempest* while dressed up as this man. His greatest design ended up loosing the "Battle of the Gauges." This man designed the first steamship designed for regular trans-Atlantic trips and he would later design an even larger ship, the *SS Great Britain*. This man collaborated with his father on the Thames Tunnel. His largest accomplishment is a transportation network that includes the Box Tunnel and a bridge over the Tamar. For 10 points, name this chief engineer of the Great Western Railway.

ANSWER: Isambard Kingdom Brunel

10. Later machines to be known as this included the series 500 PUMA. The development of this machine grew out of a conversation at a cocktail party about a patent for "programmed article transfer." In 1967 one descendant of this design appeared on *The Tonight Show* where it poured drinks and played golf. This device with a wrist design could remember up to 200 commands. It was created by Joseph Engelberger and George Devol. Its first commercial job was unloading hot die casted parts at a GM plant in New Jersey. For 10 points, name this breakthrough industrial robot.

ANSWER: Unimate

11. During this weapon's development, Thomas Patrick Cavanaugh tried to sell information about it to what he thought were Soviet spies, but were actually FBI agents. This plane has a very similar design to the earlier YB-49, which was made by the same company. The majority of these planes are based out of Whiteman Air Force Base. In February 2008, one of these planes crashed in Guam because of rain. These planes were first used during Kosovo. Since these planes cost about \$2 billion each, only 21 were made. The rear of this wedge shape plane has a distinctive zig zag design. For 10 points, name this American stealth bomber.

ANSWER: B-2 Spirit [accept either]

12. Serge Cosnier and Philippe Cinquin performed this action on Ricky. Rasmussen and Scherson performed this action using a device that integrated Trehalose. One version of this technology used to perform this action consists of graphite discs with embedded ubiquinone and glucose oxidase. Goal of this action include developing better Artificial Urinary Sphincters, artificial kidneys, and pacemakers. An alternative to this procedure is to implant a battery. This has been used to produce "electrified snails." For 10 points, name this action in which a device that extracts energy from glucose or other chemicals is implanted in a metazoan.

ANSWER: implanting a fuel cell in an animal [accept equivalents][yes, I know this answerline is completely unnecessary, but it makes me smile, so deal with it]

13. According to one of this company's employees, the teen component of one of this company's initiatives was

“was going to be the coolest thing foisted on American youth since MTV.” In one almost notable story, this company allowed George and Debbie Stickles, also known as Mike and Silver, to meet. This company created the B protocol for transferring files. One of this company's' first killer apps was developed by Sandy Trevor. Its online virtual environment was called WorldsAway. This company bought out rival The Source around the same time that it launched a consumer service called MicroNet. This tech company started out as part of the Golden United Life Insurance Company and from the 80s until 1998 this company was owned by H&R Block. This company's GUI product, WOW!, was a miserable failure. Much of this company's early success has been attributed to its CB Simulator chat feature. This company developed GIF for encoding computer images. It gave out emails addresses that were a series of numeric digits. For 10 points, name this semi-defunct ISP that was purchased by its rival AOL.

ANSWER: CompuServe

14. This author of *Four Distressed Poems* compared the heavens to a hen's egg. His other literary contributions include a poem in which a river is one of the title “four sorrows” that keep him from a woman and the introduction of a literary style of hypothetical discourse called *shelun* in a work about his idleness. This man reinvented a contraption consisting of a man like figure on a cart that would always point south. He's not Archimedes, but he did independently invent the odometer. He was the first to use water to run an armillary sphere, allowing for better astronomical predictions. One of his devices had eight noisemaking sculpted frogs that would catch copper balls that fell from dragon heads. For 15 points, name this Han dynasty inventor of a seismometer.

ANSWER: Zhang Heng

15. Sean Gallagher's blog about this event noted the “journo-jerks have been let into the star chamber.” The ringleader at this event noted that in the past the Canadian border inspector had impounded the fruit of their labor for four weeks because the Canadians thought it was alive. One video shown at this event showed a metal conglomerate hovering above a desert at sunrise as it slowly reconfigured into a word. People at this event were handed mysterious cards with a time on them. Barnes and Noble had been rumored to be involved with this event, but that turned out to just not be true. This took place at Milk Studios, which had been configured to look like the setting for a fashion show and many passive participants got there by traveling down Vista Street. The object that was central to this event has a VaporMag case and was announced to come in Pro and RT versions. The most interest things shown here were the Touch and Type Covers, but nobody was allowed to demo the later. The of the blue announcement of this event and a related product might have caused strain between one company and their OEMs like Acer. For 10 points, name this June 2012 event where Microsoft unveiled their latest attempt to build a tablet like object.

ANSWER: Announcement of Microsoft Surface [prompt on partial answer]

16. Matt Bishop showed the conditions under which information theft can occur in this model. It is a set of restrictions to get around a result of undecidability of a larger problem by Harrison, Ruzzo and Ullman. The conspiracy problem in this model is an examination of the minimum number of actors required to witness a “can share” predicate. It was devised by Synder and Lipton. This model is usually represented as a directed graph with the edges labeled with rights. This system consists of five rules which include its namesakes along with call, create, and remove. For 10 points, name this linear time decidable protection model.

ANSWER: take grant

17. Instructions found in this system include MDAP and Round up to Grid. It's not PGP, but early in this technology's history it was named Bassomatic after a *Saturday Night Live* sketch. This technology was introduced in MacOS version 7. Files in this format are sometimes combined into a suitcase. The hinting virtual machine in this technology was until 2010 under patent. This file format uses quadratic Bezier curves to encode its contents and consequently information using this technology must be rasterized before being displayed. A new format with support for ligatures called Open from Microsoft and Apple has superseded this one. For 10 points, name this format for storing fonts.

ANSWER: TrueType

18. While using this program, Ernie and Nickie Lunsford declared that they would never buy a home computer. It is known that at least the first version of this program would quote Kahlil Gibran during execution. This program was implemented by M.E. Cavanaugh. Its creator made a deal with Axlon to broadcast the results of this program to remote TV screens. This was the brainchild of Ron Jaenisch, who suggested this program might move his organization from being viewed as the draft dodge church to the high

tech church. The second edition of this program worked over the the telephone and used a second computer to play music from Lohengrin. This program instructs users to “please place the rings on top of my console.” For 10 points, name this electronic minister created by the Universal Life Church in the 1980s for officiating weddings.
ANSWER: Reverend Apple

19. **The product comes in the colors Graphite, Electric Blue, and Red Hot. Signal processing in this product is done with the aid of a fast 4D Fourier slice algorithm. This product is made by a company founded by Ren Ng.** The files this device works with are deemed “living” by its company. Unlike other products in its field, it has an odd rectangular prism shape. It is powered by the light field engine and this product works by recording the direction a photon was traveling in addition to its intensity. For 10 points, name this consumer camera that allows users to change the focus after the picture has been taken.
ANSWER: Lytro

20. **GenFDs is a program used to create software that this framework can launch. SetVirtualAddressMap is one function in this software's runtime services. It allows for graphical display through GOP. One implementation of this software is TianoCore.** GPT management of storage was initially developed as a part of this software. This software uses a small FAT formatted System Partition to store code in directories named for the programs' respective vendors. This software offers shell access and it came into existence is that its predecessor was designed in the 16bit era and thus could not take advantage of 64bit computers. This software can require the modules it loads to have been digitally signed through its Secure Boot feature. That Secure Boot featured is utilized by Windows 8 to start. For 10 points, name this framework that replaces many of BIOS's functions.
ANSWER: UEFI [or Universal Extensible Firmware Interface]

Tiebreaker:

One of these devices can network through the CX Navigator accessory. The fx-7000 was one of the first of these products released. Dino Puzzle and Block dudes were games that could be played with one of these machines. A relatively recent entry into the market for these is the Nspire and one of these products had a “Plus Silver Edition.” For 10 points, name these devices exemplified by the TI-83.
ANSWER: graphing calculator