



GHS Winter 2018 Teacher Quiz Bowl

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This quiz bowl match will have thirty tossups with one additional tiebreaker toss up, as well as thirty bonuses with one additional tiebreaker bonus. Half time will be after the fifteenth bonus, and will last for 5 minutes or until both teams are ready. Each team is allowed two optional timeouts for the whole match which will be two minutes long. Regular IHSA/NAQT rules apply and may vary from each moderator. Good luck, and have fun!

Toss-Ups

1. This European nation's smallest state is Bremen, which consists of the namesake city and Bremerhaven and is completely surrounded by Lower Saxony. This European nation's central state of Thuringia {THOR-INGE-EE-AHH} contains *Weimar, {VYE-MAR} which was the de facto capital of this nation after World War I. Thuringia and 4 other states were once part of a Communist nation in the eastern portion of this nation until the 1990 reunification. For 10 points, name this central European nation, whose western portion was led from Bonn, until its 1990 reunification when it moved its capital back to Berlin.

Federal Republic of Germany (accept "Deutschland")

2. The name of this mathematical term is thought to come from a Latin mistranslation of an Arabic word meaning "half of a chord." This mathematical function is commonly used to model such phenomena as sunlight intensity and the velocity of harmonic oscillators.* The reciprocal of this function is cosecant, and it can be extended to any real value in terms of the length of a certain line segment in a unit circle. For 10 points, name this mathematical term, which can tell the "rise" of a slope and is the trigonometric function of an angle.

Sine

3. The developmental version of this game was released in 2009, while its "alpha" version was released in 2010. The developer of this game, Markus Persson {PEER-SON}, wanted it to have role-playing elements, which today include "survival," "creative," and "adventure" modes.* Protagonists in this game travel to various locations called "biomes," including the "swamp" variety. Mobs are also prevalent in the game such as pigs, cows, and sheep. For 10 points name this three-dimensional sandbox game whose protagonist is known as Steve.

Minecraft

4. One character compares the protagonist to Icarus after discovering contraband materials in his house. Bombers are a constant presence during this novel, which culminates in a massive nuclear strike on the protagonist's unnamed city.* The protagonist's wife, Mildred, wants to add a fourth television wall, despite the fact that a third one had just been purchased. The protagonist befriends Clarisse McClellan, before she mysteriously goes missing. For 10 points, name this short story, about the fireman Guy Montag who incinerates his Fire Captain Beatty after being found with banned books, by Ray Bradbury.

Fahrenheit-451

5. This concept was first introduced by Soren Sorenson in 1909, because of his work with hydrogen ions. This concept is also used in classifying soil ranges and seawater, which is normally ranged between a 7.5 and 8.4.* This concept can theoretically have a negative value, but most products fit within the typical 14 point scale. This concept is logarithmic so a change in one number indicates a tenfold difference in hydrogen ion concentration in water. For 10 points, name this numeric scale that classifies objects based on their acidity and basicity {BAY-SIS-I-TEE} on a 1-14 scale.

pH Scale (accept “Power of Hydrogen” which Sorenson’s laboratory claims is the true meaning)

6. This company began in 2002, after its founder was denied the right to buy refurbished ICBMs from Russia. This company builds its rockets using vertical integration, with over 85% of work being done in-house. In 2008, this company's Falcon 1* was the first privately funded rocket to reach orbit, and in 2012, it successfully sent its Dragon spacecraft to the International Space Station. This company's founder has openly expressed his desire to colonize Mars, but watched its Falcon 9 spacecraft explode on the tarmac at Kennedy Space Center in 2016. For 10 points, name this company founded by Elon Musk.

SpaceX (accept “Space Exploration and Technologies Corporation” its full name)

7. During the development of this experiment, its creator coined the term “entanglement.” This experiment sought to disprove a popular idea largely pioneered by Niels Bohr and Werner Heisenberg that states that until they're measured, physical systems have no definite properties, a feature known as wavefunction collapse.* This experiment attempts to disprove that interpretation by imagining a steel chamber set up with a radioactive substance, hydrocyanic acid, a hammer, and a Geiger counter. For 10 points, name this thought experiment in which, according to quantum law, the title animal is both alive and dead inside of the chamber.

Schrödinger's Cat

8. An arrow stuck in this man's face was treated with honey by the royal physician John Bradmore, but still left a permanent scar. Henry Scrope and Richard, Earl of Cambridge, planned the Southampton Plot against this ruler to replace him with Edmund Mortimer. Although Holy Roman Emperor Sigismund acknowledged this ruler's claim to the French crown in the Treaty of Canterbury, it was the Treaty of Troyes (twah) signed with Charles VI of France that ensured his claim through a marriage to Catherine of Valois (val-WAH). At his most famous battle, this king fought Charles d'Albret (doll-BRAY), suffered an attack on his baggage train, and was aided by longbowmen firing up a muddy hill. For 10 points, identify this King of England who won the Battle of Agincourt.

Henry V [prompt on Henry]

9. Before using this thing, a woman repeats the cry "Wise!" despite her husband's insistence it is "foolish". After the final time it is used, a man opens a door to reveal "a quiet and deserted road". This thing was created by "a very holy man... to show that fate ruled people's lives" and its first owner ended up killing himself. It is thrown onto the fire by Sergeant-Major Morris, who obtained it while abroad in India. This item is last being used to prevent the presumably horribly mutilated Herbert from entering his parents' home. This thing is responsible for Mr. and Mrs. White earning 200 pounds but only through the workplace death of their son. For 10 points, name this title object of a W. W. Jacobs story which grants three wishes, albeit in horrible ways.

The **monkey's paw** [prompt on paw; do not accept "monkey"]

10. This now defunct African country, whose northwestern border was formed by the Zambezi river, was created after the Internal Settlement in 1979 as an attempt to appease militant political groups in this country. This attempt failed, however, and this nation lasted for less than six months after it was established. This state's capital was Salisbury, and its prime minister was Methodist bishop Abel Muzorewa (MOOZ-OH-RAY-WAH). Name this short-lived and unrecognised state that combined both names used by its predecessor and successor states in an attempt to bridge the gap between its white minority and black majority.

Zimbabwe Rhodesia (prompt on Zimbabwe or Rhodesia)

11. This character hides out for days in a hotel on Portland Street after unexpectedly appearing at Regents Park. Mr. Guest compares a letter scribbled by this character to the handwriting in a dinner invitation. After a young girl runs into this character, he calmly tramples on her body, in a story related by Enfield. This character (*) murders Danvers Carew, but then apparently kills himself with a vial of poison. Mr. Poole comes across this character's corpse, wearing clothes way too big for him. Dr. Lanyon tells Mr. Utterson about his utter fear of this man. For 10 points, name this character who appears whenever Dr. Jekyll drinks a potion.

Edward **Hyde** [or Mr. **Hyde**; do not accept or prompt on "Dr. Henry Jekyll" alone, but accept **Dr. Jekyll and Mr. Hyde** if they are both mentioned]

12. A non-equilibrium-related rule named for Le Chatelier gives this property for a mixture. The open-cup method is used for compounds with this property. Inerting works because this property exists only between a compound's UEL and LEL. An NFPA diamond has sections for reactivity, health, and this property. Compounds with this property are stored in (*) yellow cabinets since they have a low flash point. Materials with this property are rapidly oxidized to CO₂ and water. Ethers and most other organic solvents have this property, as does hydrogen. For 10 points, name this property possessed by compounds that will react with air and burn.

ANSWER: **flammability** [or **burning**; or turning on **fire**; or obvious equivalents; or **lower explosive limit**; or **upper explosive limit**; or propensity for **explosions** any similar answers]

13. This thinker contrasted sense-based properties and the imagination by noting that all the sensations of a ball of wax change as it is moved near fire. He corresponded with Elisabeth of Bohemia, who criticized his idea that interactions with the pineal gland bridged the separation between (*) mental and material states, a form of dualism. For 10 points, name this author of Meditations on First Philosophy and Discourse on the Method, who argued that the ability to think about existence proves one's own existence by stating "I think, therefore I am."

Rene **Descartes** (pronounced DAY-CART)

14. Archimedes proved that the area of a segment of this curve is equal to four-thirds times the area of a particular triangle inscribed in that segment. To approximate a definite integral, these curves are created by Simpson's Rule, which improves on the lines used in the trapezoidal rule. These curves have uniform acceleration, as their second derivatives are strictly (*) constant. This conic section, formed when the plane intersects the cone parallel to the slant, has eccentricity of 1. For 10 points, name this curve, followed by projectiles under the influence of gravity and graphed by degree-two functions like y equals x squared.

Parabola (prompt on any answer including the word "quadratic")

15. This conflict, fought between Finland and the Soviet Union, began in 1941 and ended in 1944. Popular literature on this conflict includes “The Unknown Soldier” by Finnish author and veteran of this war, Väinö Linna. Finland received support in this conflict from Nazi Germany. This war saw Finland largely on the offensive, intending to retake their lost territory in Karelia, as well as pushing into Russian East Karelia. However, this conflict resulted in a Soviet victory, and as a result of the peace treaty, Finland was required to expel all German troops from its territory. Name this war that occurred after the Winter War and is sometimes considered an extension of it.

Continuation War (do NOT accept Winter War or World War 2)

Half-Time (5 minutes)

16. Algorithms for doing this process include the Yarrow and one with that has a value of almost 2 to the 19,937 for its period. John von Neumann invented a “middle square” method for doing this, which is also done by the widely used Mersenne Twister. Performing this process is necessary to performing a (*) Monte Carlo simulation. It can be done by listening to environmental entropy like temperature or atmospheric noise, or through a “pseudo-” variety of this process. A seed is used to begin this process, and much of cryptography relies on this process to generate a secure key. For 10 points, describe this process which humans usually do by rolling a die.

Generating a random number (accept **RNG**; accept obvious synonyms as long as “making **randomness** seems to be the gist)

17. This quantity is cubed in the denominator of the formula for the Abraham-Lorentz force, and the time-averaged Poynting vector divided by this quantity gives radiation pressure. Beta is equal to velocity divided by this quantity. (*) Cherenkov radiation occurs when this quantity is exceeded in a medium, and vacuum permittivity times permeability gives this quantity squared. This quantity is constant in all reference frames, and a 2013 experiment apparently showed this value being exceeded, though special relativity basically says that that’s impossible. For 10 points, name this “universal speed limit,” a value symbolized by lowercase c .

Speed of light (accept obvious equivalents but prompt on “lowercase c ”; Ed’s note: if anyone’s wondering why Cherenkov radiation says this quantity is exceeded, and then we say it’s impossible, it’s because it’s exceeded in a medium)

18. This science fiction series was first introduced in a 2001 novel by Eric Nylund, titled the “Fall of Reach”. A primarily video game series, it mostly follows the soldiers of the fictional United Nations Space Command as it combats various factions, including the human United Rebel Front and the theocratic alien hegemony known as the Covenant. The title of this series comes from the superweapons in the shape of rings capable of killing all sapient life in the galaxy. Name this video game series owned by Microsoft and created by Bungie and whose most popular character is Master Chief Petty Officer John-117.

Halo

19. This author described a draper who married his cousin, Miriam Larkins, in *The History of Mr Polly*. In another novel by this non-Orwell author, Ogilvy is killed while holding a white flag. Yet another of his novels features a man who uses Thomas Marvel as an assistant and schemes to kill Dr. Kemp. Edward Prendrick is the narrator of his novel about the title character’s vivisections, *The (*) Island of Doctor Moreau*. This creator of Griffin also wrote about relations between Eloi and Morlocks, as well as a Martian invasion and a man who tampers with his refractive index. For 10 points, name this author of science fiction works *The War of the Worlds*, *The Invisible Man*, and *The Time Machine*.

ANSWER: H(erbert) G(eorge) **Wells**

20. This weapon was described by Titus Livy as “sulphur mixed with lime”. Modern theories suggest that it may have been primarily composed of potassium nitrate or calcium oxide. It was primarily utilised in naval battles, but records have shown it to have likely been used to some extent on land as well. It was used to great effect in combating Rus’ raids in the Bosphorus as well as driving back Umayyad forces during their sieges of Constantinople. Name this substance used by the Byzantines whose ingredients were a closely guarded secret and remain unknown to this day.

Greek fire

21. This Swedish diplomat permitted UN peacekeeping forces to be deployed during both the Suez Crisis and the Congo Crisis. During the Congo Crisis, fighting broke out between UN and Katanganese forces in 1961, prompting this man to fly in to negotiate a ceasefire. However, his plane crashed, resulting in his death. Over the years, many have asserted that his death was an assassination, including former US president Harry Truman. Name this second Secretary General of the United Nations, succeeded by U Thant who served from 1953 until 1961, and whom then-US President John F. Kennedy referred to as “the greatest statesman of our century”.

Dag **Hammarskjöld**

22. This type of hypothetical structure was first proposed in the 1976 book *The High Frontier: Human Colonies in Space*. Designs for this structure envision the use of centrifugal force to generate artificial gravity, and would be five miles in diameter and up to twenty miles long. Most designs for these structures include artificial land surfaces for plant growth and agriculture, and would be used as habitable settlements for humans. Name these types of hypothetical space colonies that take their name from their designer, and have been featured in various science fiction media, most notably the show *Babylon 5*.

O'Neill cylinder (accept **O'Neill colony**)

23. This man, after graduating from Emory University in 1990, chose to abandon his current life and travel and hitchhike across North America. He would eventually end up in Alaska in 1992, where he died, believed to have been caused by starvation. His story would be the subject of Jon Krakauer's 1996 book *Into the Wild*, which would later be turned into a film of the same name in 2007, directed by Sean Penn. Name this traveller who went by the name "Alexander Supertramp" and whose body was found in a now iconic abandoned bus.

Christopher Johnson **McCandless** (accept **Chris McCandless**, prompt on Alexander Supertramp prior to its mention)

24. Known as M31 or NGC 224, this object was discovered by Charles Messier in 1764. It is currently approaching another similar object about a speed of about 68 miles per second. A discovery by the Spitzer Space Telescope reveals that approximately one trillion stars are located in this object that resides in the Local Group. It is not the Milky Way, but it has a similar construct as they are both spiral forms of this specific object. For ten points, name this brightest Messier object which is the closest of its kind to the Milky Way, located in the portion of the sky that shares a name with its namesake constellation.

Andromeda Galaxy (prompt on Andromeda and Galaxy. Accept "NGC 224" before read)

25. This rock group was originally active from 1972 to 2002, but reunited in 2016 for their Great Circle Tour. Until 1978, they were known as Farm. This band's lead singer, Peter Garrett, would go on to become a politician, sitting in the Australian parliament and later becoming the Minister of Education and the Minister of the Environment.* This band's 1987 album, *Diesel and Dust*, was largely inspired by their tour around Australian Aboriginal communities and is one of the most critically acclaimed albums in Australian history. Name this Australian band from Sydney whose only major hits in the United States were their songs "The Dead Heart" and "Beds Are Burning".

Midnight Oil

26. This structure contains PML bodies and paraspeckles. The influenza virus can only replicate while within this structure. This organelle's structure is supported by its lamina. Transcription occurs in this organelle, which has a subunit that is the site of ribosome synthesis. This organelle has a double membrane lined with (*) pores, the outer one of which is continuous with the rough endoplasmic reticulum. Within it is all of the cell's genetic material, arranged into filaments called chromatin. For 10 points, name this organelle, which is often called the control center of the cell.

Nucleus

27. This compound is toxic to the human body and is thus converted by the ornithine cycle to urea. The main process for synthesizing this compound was the first industrial process to use high pressure for a chemical reaction. That process uses an iron or ruthenium catalyst. This compound is converted to (*) nitric acid in the Ostwald process. Mixing this an aqueous solution of this compound with bleach releases toxic chemicals. For 10 points, name this compound that is synthesized in the Haber-Bosch process and that has chemical formula NH_3 .

ammonia [or **azane**; accept **NH₃** before it is read; do not accept "ammonium"]

28. One variant of this logical operation computes the sum, not the carry out, in half adders and full adders. A bitwise variant of this logical operation is represented by a caret in C, is true only when the bits differ, and is the exclusive type. In C, the bitwise and logical forms of this operation are represented by a single pipe symbol and two pipe symbols, respectively. Taking the (*) union of a set is equivalent to this logical operation. According to De Morgan's laws, the not of the expression that contains this operation performed on A and B is equal to not A dot not B. It is often represented by plus. For 10 points, name this operation that is true if any input is true and is contrasted with and.

ANSWER: inclusive **or** [or logical **disjunction**; accept **U** or set **union** before "union" is read; accept **plus** before it is read]

29. Early work on this structure was supervised by Bishop Gundulf. Six ravens with clipped wings are kept here to ensure the safety of this building's country. In 1674, two skeletons believed to be those of princes were found in this structure. This building is guarded by yeomen in red and gold uniforms known as the Beefeaters. For 10 points, name this castle that houses the Crown Jewels of England, and which is where Thomas More and Sir Walter Raleigh were held before their execution.

Tower of London

30. This man was featured briefly in the video game "Call of Duty: Black Ops II". He founded and led the independence group UNITA in a war against Portugal to free his country from colonial rule. He would then later lead the UNITA against the national communist group, the MPLA. He was eventually killed during a battle in his home province of Moxico with the MPLA in 2002. Name this founder of the second-largest political party in Angola and the leader of anti-communist forces during the Angolan Civil War.

Jonas **Savimbi**

31 (Tiebreaker). This word is the codename of the main character in Persona 5. A 1935 Italian comedy directed by Enrico Guazzoni is titled for a king of this kind. This is also an alternate name for the tarot card of number (*) 0. A man who goes by this moniker infamously had several scenes featuring him in a recent movie cut, much to the dismay of those who watched the trailers and this character's actor. One of this villain's sidekicks appeared wearing a shirt with the words "Daddy's Little Monster" across the chest in the 2016 movie Suicide Squad. Name this villain who has been played by Heath Ledger and Jared Leto and is the arch enemy of Batman.

The Joker

Bonuses

1. For 10 points each, answer these questions about the First Anglo-Boer War.

(10) The Boers were European inhabitants of South Africa prior to the arrival of the British. Name their country of origin.

ANSWER: **The Netherlands** (accept **Holland** and **Dutch Republic**)

(10) This country, one of the two independent Boer states, was the primary combatant fighting against the British during the war.

ANSWER: **South African Republic** (accept **Transvaal**)

(10) This battle effectively ended the war, and resulted in the deaths of 92 British soldiers, while only 1 Boer was killed. This battle is still considered one of the most embarrassing defeats in British military history.

ANSWER: Battle of **Majuba** Hill

2. The Elder Scrolls V: Skyrim is one of the most famous and infamous games of the 2010s. For 10 points each, answer these questions about this award-winning 2011 game.

(10) This game studio, headquartered in Maryland, developed Skyrim.

ANSWER: **Bethesda** Game Studios

(10) This faction in the game, dominated by the High Elves, forced the Empire to ban the worship of the god Talos.

ANSWER: **Thalmor** (accept **Aldmeri Dominion**)

(10) This rebellious group, led by a Jarl of the same name, wishes to free Skyrim from the Empire and return to Talos worship.

ANSWER: **Stormcloaks**

3. These organic compounds were introduced in the 1980's to replace another dangerous compound. For 10 points each...

(10) Name these compounds, used in air conditioning and refrigeration, that were introduced as a replacement for CFCs.

ANSWER: **HFCs** (Accept "hydrofluorocarbons". Prompt on partial answer I guess)

(10) CFCs contribute to the diminishment of this layer in the Earth's atmosphere that protects us from ultraviolet rays.

ANSWER: **Ozone layer**

(10) This neighboring planet to Earth also has a small ozone layer among its dense atmosphere that gives it a permanent "greenhouse effect."

ANSWER: **Venus**

4. For 10 points each, answer these questions related to the decisive Battle of Waterloo that finally ended Napoleon Bonaparte's reign.

(10) The battle took place in this western European country that later held African colonies in the Congo and Rwanda.

ANSWER: **Belgium**

(10) This small German-speaking nation, located mostly in what is now the modern German state of Hesse, provided 3,000 soldiers to fight at the battle, where they defended against French attackers at Papelotte Farm.

ANSWER: Duchy of **Nassau**

(10) This Swedish pop group from Stockholm released a song in 1974 titled "Waterloo" that went on to be Sweden's entry for the Eurovision contest that year.

ANSWER: **ABBA**

5. For 10 points each, answer these questions about national anthems.

(10) This Dutch anthem was originally a patriotic song written during the Dutch revolts against Spanish rule, and is notable for its seemingly contradictory lyrics, "To the king of Spain I have granted a lifelong loyalty".

ANSWER: Het **Wilhelmus** (prompt on William or Wilhelm)

(10) This Irish national anthem was adopted in 1926. This song's lyrics encourage the people of Ireland to rise up against the British "in Erin's cause, come woe or weal". Due to the strong anti-British sentiment in its lyrics, this anthem has become the subject of some controversy in Ireland.

ANSWER: **The Soldier's Song** (accept **Amhrán na bhFiann**)

(10) The national anthem of this African country combines the lyrics of the popular hymn "Nkosi Sikelel' iAfrika" and the country's previous anthem. It features lyrics in 5 of the country's 11 languages, including Xhosa, Sesotho, and English.

ANSWER: **South Africa**

6. Answer these questions about British military songs.

(10) The Welsh song "Men of Harlech" was famously used in this 1964 film starring Stanley Baker and Michael Caine.

ANSWER: **Zulu**

(10) This song features the lyric, "tow, row, row, row, row, row" and compares the type of unit in its title to heroes of antiquity such as Alexander the Great, Hercules, and Hector.

ANSWER: **The British Grenadiers**

(10) This song, composed by William Boyce, is the official march of not only the Royal Navy, but the Canadian and New Zealand navies as well.

ANSWER: **Heart of Oak**

7. Answer these questions about math.

(10) If there are six black socks and six white socks in a drawer, what is the probability of drawing a matching pair?

5/11

(10) Find all solutions to the following equation: the quantity $x^2 + 4x + 3$, all over the quantity $3x^2 + 7x - 6$, equals 0.

$x = -1$ [do not accept any answer including "-3"]

(10) The longest diagonal in a right rectangular prism measures 13 units. If the length, width, and height are all integers, what is the prism's volume?

144

8. Name these members of the 2005 World Series.

(10) This team beat the Anaheim Angels 4-1 in the ALCS and went on to win the series.

ANSWER: **Chicago White Sox**

(10) This White Sox closer finished the final game of the World Series.

ANSWER: **Bobby Jenks**

(10) The Chicago White Sox beat this team in the World Series.

ANSWER: **Houston Astros**

9. For 10 points each, answer these questions about the film Blade Runner.

(10) Blade Runner was inspired by the novel *Do Androids Dream of Electric Sheep?* by this science-fiction author.

ANSWER: **Philip K. Dick**

(10) This American actor played the main character, Rick Deckard, in the film.

ANSWER: **Harrison Ford**

(10) Rick Deckard is tasked with hunting down four bioengineered androids, that are commonly known by this term.

ANSWER: **Replicants**

10. For ten points each, name these planets in our universe.

(10) The Blue Marble photograph was taken of this planet during the Apollo 17 lunar mission in 1972.

Earth

(10) Name this closest exoplanet to Earth.

Proxima Centauri b (accept "Proxima b" or "Alpha Centauri Bc". Do not prompt on Proxima Centauri)

(10) This planet's moons include Europa, Castillo, Ganymede, and Io.

Jupiter

11. For 10 points each, answer these questions about international special operations groups.
(10) This term is used to generally refer to Russian special forces units.

ANSWER: **Spetsnaz**

(10) This unit is the special operations force of the Irish Defence Forces, and has been deployed on peacekeeping missions in East Timor, Liberia, and Chad, and also provided protection for Queen Elizabeth II and US President Barack Obama during their separate state visits to Ireland.

ANSWER: **Army Ranger Wing** (accept **ARW** or **Fiannóglai**)

(10) This unit is the most famous of France's counter-terrorist units. Members of this unit rescued 229 passengers from Air France Flight 8969 after it was hijacked in 1994.

ANSWER: **Groupe d'intervention de la Gendarmerie nationale** (accept **National Gendarmerie Intervention Group** and **GIGN**)

12. For ten points each, name these Asian religions.

(10) This Japanese religion is also known as kami-no-michi.

Shinto

(10) This religion is represented by the symbol Yin and Yang.

Accept **Taoism** or **Daoism**

(10) Vishnu is a god of this religion.

Hinduism

13. For 10 points each, answer these questions about disco groups.

(10) This group was made up of the three Gibbs brothers and produced hits such as "Night Fever" and "Stayin' Alive".

ANSWER: **Bee Gees**

(10) This Carribean group was based in West Germany and saw several hits, including "Ma Baker" and "Rasputin".

ANSWER: **Boney M**

(10) This German band from Munich is most well-known for their song "Moskau".

ANSWER: **Dschinghis Khan**

14. For 10 points each, name these fictional starships.

(10) This ship was the personal flagship of Darth Vader until it was destroyed at the Battle of Endor after crashing into the second Death Star.

ANSWER: **Executor** (prompt on Super Star Destroyer)

(10) This Firefly-class vessel is captained by former Browncoat Malcolm Reynolds.

ANSWER: **Serenity**

(10) This Mercury-class Battlestar from the Colonial Fleet was captained by Lee Adama and served alongside the Battlestar Galactica until it was destroyed during the Battle of New Caprica.

ANSWER: Battlestar **Pegasus**

15. For 10 points each, answer these questions about the *Metro* series.

(10) The *Metro* series was created by this Russian author who wrote *Metro 2033*.

ANSWER: **Dmitry Glukhovsky**

(10) This protagonist of *Metro 2033* is also the playable character in the series of video games inspired by the first novel.

ANSWER: **Artyom**

(10) The series of video games inspired by the *Metro* novels have been developed by this Ukrainian game studio now based in Malta.

ANSWER: **4A Games**

16. A set of letters or symbols in a fixed order, used to represent the basic sounds of a language is known as an alphabet. For ten points, answer these questions about alphabets.

(10) Name the fourth letter of the Greek alphabet.

Delta

(10) This is the Roman numeral for the year 1998.

MCMXCVIII

(10) This animal represents the Egyptian hieroglyph for the letter F.

Horned Viper (Prompt on reptile and snake and similar synonyms)

17. Answer these questions about airports and airplanes

(10) This city contains airports like Midway, and another whose IATA code is ORD.

Chicago

(10) Founded in 1953, this largest German airline and, when combined with its subsidiaries, also is the largest airline in Europe both in terms of fleet size and passengers carried during 2017.

Lufthansa (accept **Deutsche Lufthansa AG**)

(10) This American multinational corporation designs, manufactures, and sells airplanes, rotorcraft, rockets, satellites, and missiles worldwide. Its CEO is Dennis Muilenburg, and the headquarters for this company is located in the Windy City.

Boeing

18. This city's Old Town portion is known as Kota. For 10 points each,

(10) Name this populous Southeast Asian city that is home to Merdeka Square and is known as "The Big Durian."

Answer: **Jakarta**

(10) Jakarta is the capital of this former Dutch colony. This island nation was lead to independent by its first president, Sukarno.

Answer: Republic of **Indonesia**

(10) Jakarta is located on this Indonesian island that was formerly the home of the Majapahit Empire and is now known worldwide for its coffee production.

Answer: **Java** (or **Jawa**)

19. It has been described as the front page of the internet. For 10 points each,

(10) Name this website based in San Francisco, which allows its users to make their own subsections. The “Ask Me Anything” subsection of this website generated so much traffic after a post by Barack Obama that it crashed.

Answer: **Reddit**

(10) Another subreddit is this one which allows users to post interesting facts that they’ve learned in the past 24 hours.

Answer: **TIL** (or **Today I Learned** (Accept “r/til” or “r/todayilearned”))

(10) This artist is known as Here_Comes_The_King on Reddit. His most upvoted post of all time is “fo shizzle” and he is a moderator on /r/trees.

Answer: **Snoop Dogg** (accept **Snoop Lion** or Calvin **Broadus** Jr)

20. If David Hilbert woke up after sleeping for one thousand years, the first thing he would ask is if this question was solved. For 10 points each:

(10) Name this problem that states that all zeros of a certain function are either the negative even integers or have real part $1/2$. This problem is equivalent to proving that $\text{Li}(x)$ [read **lie** of x] minus the prime counting function isn’t too big for large x .

ANSWER: **Riemann Hypothesis**

(10) The prime counting function, which counts the number of primes less than a certain number, is denoted by this Greek letter. This letter also denotes a constant which is approximately equal to 3.14.

ANSWER: **π**

(10)

The Riemann Hypothesis is part of this collection of seven problems, of which only the Poincare Conjecture has been solved. The Clay Mathematics Institute offers one million dollars for a correct solution to any of them.

ANSWER: **Millennium** Prize Problems

21. Mario Kart 8 was developed and published by Nintendo. It's sequel, Mario Kart 8 Deluxe appeared on the Nintendo Switch on the 28th of this month in 2017. For ten points each:

(10) Name this month in which Mario Kart 8 Deluxe was released for the Switch. This month is known for its famous "Fools Day" and a popular saying: "[This month] showers bring May flowers".

April

(10) Dolphin Shoals is the second track in the star cup of MK8 (read as Mario Kart 8). Its track is based off of this theme, which shares the name of Pompano [this] and Del Ray [this] in Fort. Lauderdale.

Beach (Accept **ocean**, **sea**, **water world**, **water level**, or anything that has to do with bodies of water like "**river**", or even "**lake**". Prompt on "**water**".

(10) Dolphin Shoals' background music is accompanied by this instrument. Under water it is this instrument created in Trinidad and Tobago which is also featured in Soulja Boy's 2007 Crank That.

Steel Drum (Accept **steel pan** or **pan**. Prompt on "**idiophone**")

22. For ten points each, give the name for each of these terms that relate to science fields.

(10) This is a piece of laboratory apparatus used for collecting gases, such as hydrogen, oxygen and nitrogen.

Pneumatic trough

(10) Hydrazines chemical formula is N_2H_4 . It is mainly used as a foaming agent in preparing polymer foams, but significant applications also include its uses as a precursor to *this*, pharmaceuticals, and agrochemicals.

Polymerization catalysts

(10) First recognized in 1900 by this person, it was conceived as the proportionality constant between the minimal increment of energy, E , of a hypothetical electrically charged oscillator in a cavity that contained black body radiation, and the frequency, f , of its associated electromagnetic wave. Name this scientist whose last name corresponds to his namesake constant.

Max Planck

23. For 10 points each, answer these questions about an Australian bush ballad.

(10) This song, written by Banjo Paterson, tells of “a jolly swagman” that “camped by a billabong”. It was once considered as a potential candidate for the official national anthem of Australia.

ANSWER: **Waltzing Matilda**

(10) This popular Australian country singer, who died in 2003, performed Waltzing Matilda at the 2000 Sydney Olympics.

ANSWER: **Slim Dusty** (accept David Gordon **Kirkpatrick**)

(10) Singer-songwriter Eric Bogle incorporated a few edited lines of Waltzing Matilda at the conclusion of his 1971 song “And the Band Played Waltzing Matilda”, which tells the experiences of an Australian soldier during this failed military campaign of the First World War.

ANSWER: **Gallipoli** Campaign

24. For ten points each, name these instruments.

(10) This reedless wind instrument is commonly used in its tenor form. It can come in alto or bass forms and also supports an F-trigger.

Trombone (Prompt on “sackbut”. Accept any preword like alto, tenor, bass etc)

(10) This instrument is played by pressing its keys which usually come in the colors black and white. It is usually used in DCI music as it can play a variety of instruments. Some forms of this instrument come in “Halo”, “Effect” and “Warm” varieties.

Synthesizer (Accept Electronic or Digital synthesizer. Prompt on varieties like “effect” and “warm” etc (accept the general term synthesizer). Prompt on “keyboard”. DO NOT ACCEPT piano. Accept most reasonable answers that contain synth or synthesizer)

(10) Specific type needed. The main tube of this instrument measures at 16 feet long. French versions of this instrument as used in the Bydło movement in Ravel's orchestration of Mussorgsky's Pictures at an Exhibition.

C Tuba (Prompt on “Tuba”)

25. Answer these questions about CW's show The 100, in which Eliza Taylor stars as Clarke Griffin.

(10) Thelonious Jaha and John Murphy must cross this desert like area to reach the City of Light.

The **Dead Zone** (Prompt on the "zone")

(10) At the end of the Dead Zone, an abandoned solar power plant resides next to a large body of water. A drone resides on a broken solar panel, controlled by this character.

A.L.I.E (pronounced Allie. Prompt on "Becca Pramheda")

(10) A.L.I.E caused this event by obtaining launch codes. An event like this occurred in Robert C. O'Brien's Z for Zachariah and the Fallout series.

Nuclear Apocalypse (Accept answers like **end of the world** or **nuclear war**. Accept basically anything with nuclear weapons that relate to the end of the world.)

26. Answer these questions about octal.

(10) Octal is a number system in this base.

Base **8**

(10) Solve $5462 + 4745$ in octal.

12427

(10) Convert the decimal number 643 to octal.

1203

27. The main body of this animal's mass is enclosed in the mantle, which has a swimming fin along each side. For ten points each:

(10) The giant axon, which may be up to 1 mm in diameter in some larger species of this animal innervates the mantle and controls part of the jet propulsion system.

Squid (Accept **Teuthida**. Prompt on "cephalopod", "Animalia", and "Animals". Anti-prompt [ask for something less specific] on "Myopsida" and "Oegopsida")

(10) Squids, known as inklings in this video game make sounds such as "wommy", while octopuses known as octolings make sounds like "veemo".

Splatoon (2) (Accept **Supuratūn [2]**)

(10) Squid is a good food source for zinc and manganese, and high in copper, selenium, riboflavin, and this vitamin.

Vitamin B12 (Prompt on vitamin B)

28. Scintillators are alternatives to these devices. For 10 points each:

(10) Name these devices that produce audible clicking noises in response to radioactivity.

Geiger counter

(10) Specifically, Geiger counters detect the presence of this type of radiation, which has sufficient energy to strip electrons off of a material.

ionizing radiation

(10) Hans Geiger also co-discovered an empirical law describing the time-scale of this process. Later, George Gamow (GAM-off) rigorously proved that law by assuming that this process occurs via quantum tunneling.

ANSWER: **alpha decay** [prompt on "decay"]

29. In one work, Hubert Dreyfus described *What (these things) Can't Do*. For 10 points each:

(10) Name these things that Dreyfus argued will always rely on symbols rather than unconscious instincts.

computers (prompt on **robots**, **artificial intelligence**, or **machines**)

(10) In the paper "Minds, Brains, and Programming," John Searle made this thought experiment to argue that computers will never have consciousness, no matter how human looking they appear.

Chinese room argument

(10) This computer scientist helped crack the enigma machine during World War II and names a test for determining if a computer has achieved strong A.I. that is based on its ability to pass for a human in conversation.

Alan **Turing**

30. For ten points each, give the name of the country's current *capital* based off of the description of the country. The answer should be a modern *capital*, not a country.

(10) This country emerged as one of the world's earliest civilizations, in the fertile basin of the Yellow River. For millennia, This country's political system was based on hereditary monarchies, or dynasties, beginning with the semi-legendary Xia dynasty in 21st century BCE.

Beijing, China (accept **Peking**.)

(10) This Southeast Asian nation occupying half the island of Timor, is ringed by coral reefs teeming with marine life. Landmarks in the capital speak to the country's struggles for independence from Portugal in 1975 and then Indonesia in 2002.

Dili, Timor-Leste or East Timor (Accept **Kota Dili**. Prompt on the "City of Peace")

(10) This former German colony gained its independence from South Africa in 1990, however the city of Walvis Bay remained under South African control until 1994. Recognised languages in this country include English, Oshiwambo, Khoekhoe, Afrikaans, German, and Setswana.

Windhoek, Namibia (accept **Windhuk**)

31 (Tiebreaker). In 2012, Obama made a controversial recess appointment of Richard Cordray to head this agency, which accepts consumer complaints via platforms like Youtube and Twitter. For 10 points each:

(10) Name this bureau of the federal government that was authorized by Dodd-Frank. Elizabeth Warren proposed this independent agency whose constitutionality is being challenged in court.

Consumer Financial Protection Bureau

(10) The CFPB was established in response to the global financial crisis that peaked in this year, beginning with the collapse of Lehman Brothers in September of this year.

2008

(10) In November 2017, Trump appointed this director of the Office of Management and Budget to lead the CFPB despite the resigning director naming his deputy Leandra English as successor.

Mick Mulvaney