TB1. After a 1996 coup in this country, an election was held in which all of the opposition candidates were under house arrest. Ibrahim Baré Maïnassara [bah-ray mah-EEN-ah-SAR-ah] won that election, but he was killed while trying to flee this country three years later, and replaced by Da·ou·da Malam Wan·ké. Hamani Di·ori became the first president of this country in 1960, with the support of Boubou Hama, and this country's recent leaders have been Mamadou Tandja and Ma·ha·ma·dou Iss·ou·fou. In 2003, there was a controversy in the United States over whether Iraq purchased yellowcake uranium from this country. Identify this country named for a major river, whose capital is Niamey.

Answer: (Republic of) <u>Niger</u> [or (République du) <u>Niger</u>]

If the score is still tied, continue. If it is not tied, the game is over.

TB2. The type of telescope named for this person, which has a wider field of view than the one named for Galileo and creates an upside-down image, uses a convex lens as the eyepiece. Isaac Newton demonstrated that one of this scientist's findings was only an approximation because this scientist did not take into account the mass of a second object. In that rule, this scientist related the semi-major axis length cubed and the time period squared for an orbit. Another law developed by this scientist states that equal areas are swept out in equal times by a line from the sun to a planet. Name this scientist who developed three laws of planetary motion.

Answer: Johannes <u>Kepler</u>

If the score is still tied, continue. If it is not tied, the game is over.

TB3. A woman in this poem asks "Are you alive, or not? Is there nothing in your head?", and in a reference to Shakespeare's *Antony and Cleopatra*, her chair is said to be like a burnished throne at the beginning of this poem's second section, *A Game of Chess*. The line "London Bridge is falling down falling down falling down" appears near the end of this poem's last section, *What the Thunder Said*, which ends with the words "Shantih shantih shantih." This poem begins "April is the cruellest month," and it includes many references to the Holy Grail. Name this modernist poem by T. S. Eliot.

Answer: *The <u>Waste Land</u>*

If the score is still tied, continue. If it is not tied, the game is over.

TB4. One painting by this artist shows a seated woman in a dark blue dress and black hat with a puppy and book on her lap, and a girl facing away from the canvas with her hand on an iron fence. This painter of *The Railway* used the same model, Victorine Meurent [veek-tor-een myoo-rawn], in several other paintings, including one in which she lies almost nude on a bed with a black cat at her feet and with a servant bringing her flowers. In another painting by this artist, the same model sits next to two clothed men as a woman in a white chemise bathes behind them. Name this French painter of *Olympia* and *The Luncheon on the Grass.*

Answer: Édouard <u>Manet</u> [ayd-war man-ay]

If the score is still tied, continue. If it is not tied, the game is over.

TB11. The development of these cells has been linked to a zinc-finger protein called SLUG. Waardenburg [VAR-din-burkh] syndrome and DiGeorge syndrome are caused by the improper development of these cells. The chromaffin [KROH-muh-fin] cells of the adrenal glands, and the para·follicular cells of the thyroid are both derived from these cells. These ecto·derm-derived cells are initially found in the border of a plate and the epidermis after the plate folds into a tube. Name these embryonic cells that develop into Schwann [shvahn] cells and the portions of the nervous system outside of the brain and spinal cord.

Answer: <u>neural crest</u> cells

If the score is still tied, continue. If it is not tied, the game is over.

TB12. Before becoming the King of Germany, Henry the Fowler headed a duchy with this name. Almost half of a kingdom by this name was given to Prussia at the Congress of Vienna. That polity reached the status of kingdom when Frederick Augustus I made peace with Napoleon after the Battle of Jena. Like Thuringia [thuh-RIN-jee-uh], that kingdom was ruled by the House of Wettin [VET-een]. This name, which is not Holstein ["HOLE"-shteen], used to apply to northwest Germany; people from that region joined people from Schleswig [SHLESS-veek] in Great Britain after the Romans left. Give this name of a current German state that includes Dresden.

Answer: <u>Saxony</u>

If the score is still tied, continue. If it is not tied, the game is over.

TB13. Based on compositions by this man, Franz Liszt wrote a set of six grand études and his *Grande fantaisie de bravoure sur la clochette.* An intermezzo in Robert Schumann's *Carnaval* is named for this person. This composer used Gioachino [joh-ah-KEE-noh] Rossini's *Moses in Egypt* as a basis for his *Variations on One String.* A prestigious violin competition in Milan is named for this person, whose 24th and final caprice was the basis of a rhapsody written by Sergei Rachmaninoff. Name this person who performed on a violin known as "il cannone guarnerius" [eel kahn-NOH-nay gwar-NAIR-ee-uss], and who was the subject of the film *The Devil's Violinist.*

Answer: Niccolò <u>Paganini</u>

If the score is still tied, continue. If it is not tied, the game is over.

TB21. This figure's realm contains a woodcutter who attempts to cut a constantly regenerating osth·manthus tree. This figure was punished by being turned into a three-legged toad. When 10 crows that served as suns made the world too hot, nine of them were shot down by her husband, the heavenly archer Hou Yi. This goddess lives with a pestle-wielding Jade Rabbit in her principal domain. This deity consumed a full pill of immortality, causing her to float up into what is now her domain. Name this Chinese goddess of the moon.

Answer: Chang'e [chong uh] [or Chang'o or Heng'e]

If the score is still tied, continue. If it is not tied, the game is over.

TB22. Aristotle wrote that this concept "is not a permanent actuality, but consists in a process of coming to be", and he differentiated between its potential and actual types. Empiricists such as George Berkeley [BARK-lee] denied the existence of both types of this concept because they could not be detected. Thomas Aquinas said that no body based on this concept can have a boundary. Bertrand Russell claimed that philosophers did not understand this concept because they tried to apply the rules of numbers to it. Georg Cantor [GAY-awrk KAHN-tor] distinguished between two types of this concept, labeling them omega and aleph-naught. Name this concept that is limitless in size.

Answer: infinity or infiniteness or infinitude [prompt on boundless or unboundedness]

If the score is still tied, continue. If it is not tied, the game is over.

TB23. This system is the simplest way to represent a kappa curve, which has two vertical asymptotes. Euler's ["oiler's"] formula connects two ways to write complex numbers based on this system. A conic section with a focus at the origin is written in this system as a rational function with the denominator equal to one plus or minus the eccentricity times either the sine or cosine function. This system can be extended to three dimensions in two different ways: cylindrical and spherical. This system makes it easy to write the equations of limaçons [leem-ah-sawnz] and spirals. Name this system in which a point is defined based on distance from the origin, called r, and the angle with the right half of the horizontal axis, called θ ["theta"].

Answer: polar coordinates or polar coordinate system

There are no more overtime questions available. If the score is still tied, contact the control room for further instructions. If it is not tied, the game is over.