

FORT OSAGE NOVICE SET (FONS)

Questions edited by Joshua Malecki. Questions written by: Ethan Morrow, Lydia Calderon, Colin Turnham, Brady Orwick, Douglas McIntosh, Josh Merithew, Joseph Seaba, Dexter Wickham, Maya Baughn, Mia Phillips, Zachary Beltz, and Joshua Malecki.

Round 4

1. The first truly scientific study of these objects was undertaken nearly simultaneously by Jean-Baptiste Lamarck and Luke Howard. Howard's Latin naming system is still used for these objects found in the homosphere,* the 3 lower layers of the Earth's atmosphere. Silver iodide is used to "seed" these objects, which has been suggested as an alternative to the severe heat expected in Dubai for the 2022 World Cup. For 10 points, name these objects, which come in varieties such as "cirrus," "stratus," and "cumulonimbus."

Clouds

2. The first draft of this document was written in 1792 with the assistance of James Madison, but set aside for this man's final term as President, chiefly due to internal struggles within his Cabinet. The revised version of this document, which warns against "foreign entanglements,"* and refers to the actions of political parties as a "frightful despotism," was edited by Alexander Hamilton. For 10 points, name this document, first published in the *American Daily Advertiser* in 1796, written by George Washington, that also warns against sectionalism, and is still read aloud by the Senate on his birthday.

Farewell Address (official title is "**The Address of General Washington to the People of the United States on his declining of the Presidency of the United States**" - give a power to anyone who knows the ENTIRE title)

3. An island controlled by this country has been theorized as the location for the story of ancient Atlantis. That island, Santorini, is a part of the Cyclades island group which lie along the southeastern edge of this nation. This nation and its northern neighbor share the Rhodope Mountains,* and its capital lies on the plains of Attica. That capital is also served by the port of Piraeus, which is the busiest port in Europe. For 10 points, name this southeastern European nation, which also controls the Dodecanese Islands, the Isthmus of Corinth, and lies northeast of the Aegean Sea.

Greece (or Hellenic Republic)

4. This artist's father and grandfather were both sculptors, and his grandfather produced the massive statue of William Penn that stands atop Philadelphia's City Hall. A sculpture by this man, *Bent Propeller*, sat outside 7 World Trade Center until it was destroyed on 9/11. This artist's *Mercury Fountain** reflects his interest in "kinetic sculptures" and he is best known for his work with "mobiles" and "stabiles." For 10 points, name this American artist of *Seven Horizontal Discs*, *La Spirale*, and *Lobster Trap and Fish Tail*, the originator of the "mobile."

Alexander "Sandy" Calder

5. One sect of this religion worships Prince Emanuel Edwards and observes strict dietary regulations, avoiding meat, mangoes, and sugarcane. The holy book of this religion, the *Holy Piby*, was written by Robert Athlyi Rodgers.* This religion regards the longtime Ethiopian emperor Haile Selassie I as its deity, and civil rights activist Marcus Garvey as a prophet. For 10 points, name this religion, based in the Caribbean, which regards Ethiopia as Zion, the use of cannabis as a spiritual device, and whose adherents are known for their dreadlocked hair.

Rastafarianism

6. Russian scientists have long believed that this event was caused by a disease prevalent among marmots, while others believe an Ebola-like virus to be the culprit. A military leader from Central Asia used an early form of biological warfare to help precipitate this event, which saw the mysterious Rabbi Jacob of Toledo blamed for poisoning wells* throughout Europe to eliminate Christians. For 10 points, name this event, known as the *la moria grandissima* (The Great Mortality) throughout Europe, in which twelve Genoese galleys that landed in Messina, Sicily began spreading a virulent disease that killed between a third and a half of Europe's total population.

Black Plague (accept "**Black Death**," accept "**The Great Mortality**" before mention)

7. In a 2006 Jamie Johnson documentary, this businessman is revealed to have disowned his granddaughter for her appearance in the film, *The 1%*. In 1962, this man became a millionaire at age 32, and bought his current corporation that same year. That corporation, Berkshire* Hathaway, originally produced textiles, but has since divested itself from that area. For 10 points, name this prominent Omaha-based businessman, who became a billionaire on paper in 1990, and is now the 3rd wealthiest in the world as of 2015.

Warren Buffett

8. In one poem, this author concludes, "The truth must dazzle gradually." This author of "Tell All the Truth" describes in another poem "a blue, uncertain stumbling buzz" in a poem entitled, "Wild Nights."** In one of her most famous poems, this author describes how she "passed the fields of grazing grain" and "passed the setting sun." For 10 points, name this author, nicknamed the "Belle of Amherst," who describes a carriage ride that "held but just ourselves/And immortality" in her poem "Because I Could Not Stop For Death"

Emily Dickinson (accept "**Belle of Amherst**" before mention)

9. A California man has credited this NFL star with saving his life by inspiring him to start a diet. A four-sport star in high school, this man attended the University at California for 3 years before being drafted in 2007 by the Buffalo* Bills. After 3 plus seasons with Buffalo, he was traded to his current team, where, in a January, 2011 playoff game, he broke 9 tackles on a 67 yard touchdown run, culminating in a small earthquake registering beneath the field. This man announced his retirement from the NFL during the 2016 Super Bowl. For 10 points, name this notoriously unwilling interview participant and now-former Seattle Seahawks running back who's "here so he won't be fined."

Marshawn Lynch

10. This artist remained in Paris during the Nazi occupation during World War II, and worked in bronze despite the German prohibition against it. This artist's earliest period of paintings were rendered in somber tones,* frequently with prostitutes and beggars as subject matter, such as *The Old Guitarist*. His Version "O" of *Les Femmes d'Alger* sold in May, 2015 for a record 179 million dollars (U.S.). For 10 points, name this artist of *Les Demoiselles d'Avignon*, *Boy with a Pipe*, and the protest mural, *Guernica*, a Cubist who was also a sculptor, printmaker, ceramicist, and stage designer.

Pablo Ruiz y Picasso

11. This capital city was originally named Bytown, and its early settlers were drawn to the area because of the building of the Rideau Canal. It was the destination for a 1935 "Trek" in boxcars by unemployed workers, and partially destroyed in a 1900 fire* that also heavily damaged its neighboring city of Hull. A 2001 land acquisition brought in the nearby county of Carleton and Cumberland Township. For 10 points, name this capital city, whose Parliament Hill was the scene of a 2014 terrorist attack that killed one soldier, and who replaced Quebec as the capital of Canada in 1866.

Ottawa

12. The earliest ancestors of this scientific class originated in the Carboniferous period having evolved from advanced tetrapods. The K-Pg extinction event wiped out a number of early species of this class, which is divided into anapsids and synapsids based on skull roof morphology.* Many scientists choose to include birds in this class, due to its historical similarity. For 10 points, name these cold-blooded creatures that are covered in scutes, or scales, which fuse together in a turtle to form its shell, and also includes snakes and lizards.

Reptiles or Reptilia

13. A businessman with *this* name helped found the Atlantic Telegraph Company, which placed the first transatlantic telegraph cable in 1857. An ancient leader with only *this* name created the Achaemenid* Empire that covered much of central and southwest Asia. Another man with *this* name is credited with the invention of the reaper and whose Chicago-based factory burned in the Great Fire of 1871. For 10 points, give this name, the surname of father-daughter singers of songs such as "Achy Breaky Heart," "Wrecking Ball," and "We Can't Stop," also shared by Field and McCormick.

Cyrus

14. The original title of this controversial work was *Four and a Half Years (of Struggle) Against Lies, Stupidity, and Cowardice*, but a shorter title was suggested by Max Ammann. Volume 1 of this work was published while the author was in prison* for attempting to overthrow the government of his nation. In one portion of this work, the author outlines his goal to "turn our country's gaze to the east," meaning Russia. For 10 points, name this work, in which the author outlines plans for gaining *lebensraum* or living space, and advocates the removal or extermination of the Jewish people, a work by Adolf Hitler.

Mein Kampf (which means "My Struggle")

15. A prank organized by this author led thousands to show up at his university, the *École Normal*, believing that Charles Lindbergh would be awarded an honorary degree. In his earliest work, 1938's *Nausea*,* this author outlined some of his earliest theories of his prominent school of thought. That school, existentialism, is illustrated in a work in which three characters find themselves locked in a sparse room, with Second Empire furniture. For 10 points, name this French author of *The Age of Reason*, *Being and Nothingness*, and a work which states, "Hell is other people," *No Exit*.

Jean-Paul Sartre

16. This chemical element is a metalloid and is a common n-type dopant in semiconductor electronic devices. This element occurs in many minerals, usually with metals or sulfur. When this element oxidizes, it smells like garlic,* and trace elements of it are common in the diets of animals such as hamsters and rats. For 10 points, name this element, whose trioxide was, until recently, a common additive used in the production of pesticides, herbicides, and insecticides, with atomic number 33 and chemical symbol As.

Arsenic

17. This god was known as a trickster, typically to benefit mankind. This non-African god rescued Ares from a vessel where he had been imprisoned by Otus and Ephialtes. This Greek god's gifts to Pandora* were lies, seductive words, and a poor character. According to Aesop, this god had assigned each person their share of intelligence, and he helped many athletes, who regarded him as their patron. For 10 points, name this Greek god, who instructed Odysseus to eat a magic herb after informing him about his men's fate with Circe, the messenger god whose symbols include a rooster and a caduceus.

Hermes (accept "Mercury" before "Greek")

18. This composer went into civil service first, before entering the Russian Musical Society. This Russian composer was *not* a member of the Mighty Handful, but he did collaborate with Mily Balakirev on a piece that opens with a bassoon solo and uses a 5/4 movement. That piece, *Romeo* and Juliet*, is recognized as his first masterpiece. He used portions of *La Marsellaise* and *God Save the Tsar* in his most recognizable work, written to commemorate the 70th anniversary of the Russian victory over Napoleon. For 10 points, name this Russian composer of *The Nutcracker*, *Swan Lake*, and *1812 Overture*.

Pyotr Ilych Tchaikovsky

19. This American river begins in La Poudre Pass in its namesake state, and it meets its largest tributary, the Green River, in a smaller state to the west, near Canyonlands National Park. This river is traversed by numerous dams, including Glen Canyon,* as it travels southwest, and 90% of its remaining water is diverted at the Imperial Dam for the All-American Canal for the Imperial Valley agricultural region. For 10 points, name this western river, which flows through seven states, and forms the border between Arizona and California, before traveling south through Mexico to the Gulf of California.

Colorado River

20. One precipitating event for this incident may have been the battle of Gettysburg, which ended just ten days earlier. On the day this event began, a volunteer fire company called the “Black Joke” began destroying property* at the Ninth District Provost Marshal’s office, which then spread throughout the city. For 10 points, name this 1863 incident, incorrectly shown in Martin Scorsese’s *Gangs of New York* as involving the U.S. Navy, that killed over 100 people and only ended when 4,000 soldiers were brought from the battlefield to quell the disturbance in the namesake city after four days.

New York City Draft Riots (Accept **Draft Week Riots** as they were known at the time; prompt on partial answers)

21. The formula for this geometric shape was first derived by Archimedes. It equals the derivative of the formula for the volume with respect to r because the total volume inside one of these shapes can be thought of as a summation. It has no set surface* or center and is completely symmetrical. For 10 points, name this shape, which comes in only three-dimensional varieties and contains no edges or vertices, whose volume can be found with the formula V equals 4 thirds pi r cubed.

Sphere (accept “**ball**” before “3 dimensional”)

22. A character with *this* name in Nathanael West’s *Day of the Locust* is the former night manager of an Iowa hotel whose hands seem to operate independently from his body. An artist with *this* name worked as an illustrator for *Harper’s Weekly* before becoming successful for his landscapes like *Breezing Up and *The Gulf Stream*. An ancient writer with this as his *only* name created the epics, *The Odyssey* and *The Iliad*. For 10 points, give this name of the character Simpson, who inspired an animated likeness, and the artist Winslow.**

Homer (accept “**Homer Simpson**” before artist)

BONUSES

1. These warrior people typically began battles with the beating of a kettle and smoke signals. For 10 points each...

A. Name these nomadic people of Central Asia, who conquered areas from China to the Middle East, through lightning speed attacks.

Mongols

B. This famous leader of the Mongols established the Yassa inheritance system among his people, and reestablished the Silk Road, via Karakoram.

Genghis Khan (accept Temujin)

C. On the online series "Crash Course: World History," the host, author John Green, has famously called the Mongols *this* term, due to the fact that they violate many famous historical norms, such as successfully conquering Afghanistan.

"The Exception" (accept "We Are the Exception!" or equivalent that involve Exception)

2. This museum was founded in 1819 under the patronage of Ferdinand VII. For 10 points each...

A. Name this Madrid-based art museum that holds over 7,000 paintings, and received over 2.3 million visitors in 2013.

Museo del Prado

B. One of the most prominent paintings at El Prado is this Diego Velazquez work that depicts the Infanta Margaret Theresa surrounded by an entourage including servants and a dog.

Las Meninas (accept "The Maids of Honor")

C. The most represented artist at El Prado is this Spanish artist of the "Disasters of War" series, which includes *3rd of May, 1808*, as well as the "Black Paintings," including *Saturn Devouring His Son*.

Francisco Goya

3. A mountain along the eastern border of this nation erupted almost continuously from 2002-2014, displacing an estimated 400,000 people. For 10 points each...

A. Name this 2nd largest nation in Africa, which has dealt with a number of internal conflicts, and was formerly known as Zaire.

Democratic Republic of the Congo (accept "DRC")

B. The Democratic Republic of the Congo and its western neighbor are divided by the Congo River, which also separates the nation's capitals. Name EITHER one.

Kinshasa (DRC) OR **Brazzaville** (Rep. of Congo)

C. The DRC has experienced two civil wars since 1996, both of which have involved fighting with this eastern neighbor that experienced a devastating 1994 genocide.

Rwanda

4. Answer these questions about epic stories whose authors are unknown. For 10 points each...

A. In this Old English alliterative poem set in Scandinavia, the namesake hero slays a dragon, a monster named Grendel, and the monster's mother.

Beowulf

B. This epic poem tells the story of the title character's actions at the Battle of Roncevaux Pass, where he dies after blowing his oliphant horn to signal Charlemagne's forces.

Song of Roland

C. This epic poem from Mesopotamia tells the story of the title king of Uruk, and his travels with his friend Enkidu, in which they defeat the Bull of Heaven and Humbaba.

Epic of Gilgamesh

5. This professional sports league is the only one of the 4 major sports to cancel an entire season. For 10 points each...

A. Name this professional sports league that cancelled its 2004-05 season after its players and owners could not agree on a new contract. Its teams include the Montreal Canadiens and the New York Rangers.

National Hockey League (accept "**NHL**")

B. The NHL also "locked out" its players in 2012-13 for half the season partially due to complaints over the use of *this* financial mechanism. It is a limit on the amount of money a team can spend on players for a given year, which for the 2015-16 season is 71.4 million.

Salary Cap

C. The 2004-05 unplayed season changed the order of the NHL first year player draft. With no season played, all teams drew for the number 1 pick. The Pittsburgh Penguins won and chose this Canadian player, considered by many to be the best hockey player since Wayne Gretzky.

Sidney Crosby

6. A 1997 movie with this title tells the story of the spaceship *Lewis and Clark's* ill-fated voyage to discover what happened to the namesake ship that disappeared years earlier. For 10 points each...

A. The ship and movie both name this *boundary* in spacetime beyond which any light is unobservable, according to general relativity.

Event horizon

B. Event horizons are best known due to their location on the edge of these phenomena, an area so dense that light cannot escape.

Black hole

C. General relativity theorizes that this hypothetical location is where two points in spacetime can be connected by a "tunnel" allowing one, to essentially, cross periods of time quickly.

Wormhole

7. The first two periods of this religious movement occurred before the Civil War. For 10 points each...

A. Name this religious movement in America that introduced Jonathan Edwards and George Whitefield to American audiences, and the beliefs of fundamental Christianity.

Great Awakening

B. During the Second Great Awakening, the center of religious revivalism was the so-called "burned-over district" located in the western part of this northeastern state.

New York

C. One religion that emerged out of the "burned-over district" in New York was this faith, whose founder, Joseph Smith, claimed to have received gold plates from the angel Moroni.

Mormon Church (accept the "**Church of Jesus Christ of Latter Day Saints**")

8. October, 2015 brought turmoil to the U.S. House of Representatives. For 10 points each...

A. This Ohio Representative was the Speaker of the House from 2011 until his resignation on October 30.

John Boehner

B. This man, the House Majority Leader from California, was the prohibitive favorite to take Boehner's place, until he withdrew from consideration. The job was eventually taken by Paul Ryan.

Kevin McCarthy

C. One reason for McCarthy's withdrawal was his revelation that the Committee investigating *this* incident was being used for political purposes to drive down Hillary Clinton's poll numbers.

Benghazi Embassy Attack (accept anything that mentions "**Benghazi**" and the "**U.S. Embassy**" along with an "attack")

9. A two-headed dog named Orthrus was tasked with guarding this group. For 10 points each...

A. Name these red cattle, typically referred to by their owner's name, the son of Chrysaor and grandson of Medusa.

Cattle of Geryon

B. This Greek hero killed Orthrus, Erytion, and the namesake cattle owner as part of his 12 Labors.

Heracles (accept "**Hercules**")

C. While Heracles is driving the cattle back to Eurystheus, this goddess sent a gadfly to distract and annoy him.

Hera

10. African-American painter Jacob Lawrence created a series of 60 paintings about this historical event. For 10 points each...

A. Name this event, in which thousands of African-Americans left the Southern states after World War I for the North, seeking a better life.

Great Migration

B. In one of Lawrence's *Migration Series* paintings, a terminal is shown with doors going to 3 Northern cities, including this city, whose South Side-area elected Oscar DePriest to the U.S. House in 1928. DePriest was the first African-American lawmaker elected to Congress from outside the South.

Chicago

C. The Great Migration is also credited with igniting *this* artistic movement, of which Lawrence was often linked to, based around a namesake New York City neighborhood.

Harlem Renaissance

11. A 2015 Congressional inquiry about this government agency claimed that morale is "critically low." For 10 points each...

A. Name this government agency originally tasked with suppressing counterfeit currency. Ironically, legislation to create it was sitting on President Lincoln's desk when he was assassinated in 1865.

Secret Service

B. The Secret Service was given the task of guarding the President after this President was assassinated in Buffalo in 1901 by Leon Czolgosz {ZOL-GOTCH}

William McKinley

C. The Secret Service detail guarding this government building has been criticized for a series of incidents in which civilians have jumped fences and gained access to it.

White House

12. A 2010 mining disaster in this U.S. state killed 29 men. For 10 points each...

A. Name this state, created in 1863 during the Civil War when a group of western counties from its namesake state opposed secession from the Union, and petitioned for statehood.

West Virginia

B. The 29 miners who died worked in *this* industry, one of the largest employers in West Virginia.

Coal mining

C. The explosion in the Upper Big Branch Mine was largely due to a unknown source igniting *this* alkane, the main component of natural gas, with chemical formula CH₄, that was prevalent in the mine.

Methane

13. One character in this novel is disgusted by the “feelie” *Three Weeks in a Helicopter*, which he watches with Lenina Crowne. For 10 points each...

A. Name this 1932 novel by Aldous Huxley that describes a dystopian future where relationships are forbidden and people use a drug called soma to escape their feelings.

Brave New World

B. At the beginning of *Brave New World*, the “Bokanovsky Process” is described, whereby more members of the World State are created using this method.

Cloning humans (accept any similar answer to “**creating**” a person)

C. The novel is set in 632 A.F, which stands for “After” *this individual*, whose process of using the assembly line in the manufacture of automobiles revolutionized the process.

Henry Ford

14. An ionic compound is when ions are held together by electrostatic forces, but is neutral overall. For 10 points each...

A. An ionic compound is neutral because it contains both positively and negatively charged ions. Name EITHER one of *these*.

Cations OR Anions

B. This energy is released when a crystal containing one mole of an ionic compound is formed directly from gaseous ions.

Lattice energy

C. In *this* man's law of physics, he described the electrostatic interaction between electrically charged particles. This law is fundamental to the theory of electromagnetism.

Charles Coulomb

15. America began this operation less than a month after 9/11. For 10 points each...

A. Name this military operation that began with coordinated air assaults of Taliban and Al-Qaeda positions inside Afghanistan in October, 2001. This operation that did not end until December 31, 2014.

Operation Enduring Freedom (prompt on partial answer; DO NOT accept or prompt on "War on Terror" due to its later usage!!)

B. Enduring Freedom has had several subordinate operations throughout the world, including one in *this* Pacific Island nation, which has dealt with an Islamic fundamentalist uprising along with a Communist insurgency on its southern island of Mindanao.

The Philippines

C. Operation Enduring Freedom and the 2003 Operation Iraqi Freedom are part of this ongoing conflict, that was announced in a Sept. 20th, 2001 speech by President George W. Bush.

War on Terror (prompt on partial answer)

16. This novel was subtitled "A Tale for Today," and was a collaboration between two authors. For 10 points each...

A. Name this novel by Charles Dudley Warner and Mark Twain that is named for an era in American history, after the Civil War, where corruption and greed were commonplace.

The Gilded Age

B. In *The Gilded Age*, the protagonist, Laura Hawkins, travels to Washington, D.C. in an attempt to convince Congress to buy her father's unimproved land located in *this* Southern state, the only one that was not forced to undergo Radical Reconstruction.

Tennessee

C. One common criticism of the historical Gilded Age was the presence of *these* entities, which dominated politics in most major cities by dispensing favors and gathering votes from immigrants. These entities were not discussed in the novel, but are exemplified by Tammany Hall.

Political machines (accept "**urban political machines**;")

17. This chemical element group is often displayed below the periodic table along with actinides. For 10 points each...

A. Name this group, often referred to as "rare earth metals," whose official name comes from element 57 with symbol La.

Lanthanides (accept "**lanthanoids**"; do not accept "rare earth metals")

B. In a diagram of the periodic table, the lanthanides and actinides are shown in 2 additional rows below the main body, largely for aesthetic reasons. What TWO rows, or periods, should these two groups be placed into? (BOTH answers required)

6th and **7th** (prompt on partial answer)

C. Element 63 in the Lanthanide series is the most reactive of the series and is used in lasers. It derives its name from the continent where it was discovered in 1901.

Europium

18. This former Yugoslav Republic fought the Ten Day War with Serbia when Yugoslavia broke up in 1991. For 10 points each...

A. Name this now-independent former republic with capital at Ljubljana that is the westernmost nation created out of the former Yugoslavia.

Slovenia

B. In 2004, Slovenia entered this military organization, created in 1947, that pledges mutual defense between European nations and the United States and Canada.

North Atlantic Treaty Organization (accept "**NATO**")

C. Slovenia is the only nation in the former Yugoslavia that has this faith as its majority. It is also the majority faith in Spain and Italy.

Catholicism (accept "**Roman Catholic**")

19. Many of this man's poems were intended as lyrics to songs such as, "oh, my love's a red, red rose." For 10 points each...

A. Name this Scottish poet of "A Red, Red Rose," "To a Louse," and "Auld Lang Syne."

Robert Burns

B. "Auld Lang Syne" is traditionally sung by people on this holiday that occurs once a year and involves a "countdown."

New Year's Eve or Day

C. Another poem by Burns, which sees Leezie startled by a cow that she thinks is the devil, while Will mistakes an oak tree for a witch, is named for this formerly pagan holiday, now celebrated with candy and costumes.

Halloween

20. This composer cited Indian philosophy and Zen Buddhism as his major influences. For 10 points each...

A. Name this American avant-garde composer of *I Ching* (EE-ching) and *Music for Piano*, known for his unusual approach to composition, especially involving non-musical objects.

John Cage

B. Cage's most famous, and controversial, work is "4'33," in which the musicians sit on the stage performing *this* action for the title length of time.

Not playing their instruments (accept "**Sit in silence**" or anything comparable)

C. Cage stated that "4'33" actually incorporated ambient sounds and murmurs from the audience during its 1952 premiere in this upstate New York town, the site of a very famous 3-day rock concert in 1969.

Woodstock, New York

21. American-Canadian relations were not always so peaceful, and the British were often the catalysts. For 10 points each...

A. Benedict Arnold and Richard Montgomery led American forces into Canada during this war, in which they took Montreal but were stopped at Quebec by a massive blizzard and British forces.

American Revolutionary War (accept "**American Revolution**" or "**Revolutionary War**")

B. A border dispute between the state of Maine and the Canadian province of New Brunswick over the border between them nearly led to bloodshed in *this* "war," named after the disputed valley in which it took place.

Aroostook War (accept "**Pork and Beans**" War")

C. Another border dispute between America and Canada over *this* western territory began with incoming President James Polk's admonition of "54'40" or Fight" and thankfully ended with an agreement to divide the territory between the 2 nations at the 49th Parallel.

Oregon Country or Territory

22. DNA replication begins with the "untwisting" of the double helix, followed by the helicase cutting the two sides of the "ladder." For 10 points each...

A. Replication also involves this enzyme that synthesizes long chains of nucleotides.

Polymerase

B. Another enzyme in the cell is this machine that assembles amino acids into proteins.

Ribosomes

C. A change in the nucleotide sequence of a genome in an organism or a virus causes this. An acquired one of these is called somatic.

Mutation