

ACF Nationals 2013

Packet by Mike Cheyne, Auroon Gupta, and Rob Carson

Tossups

1. The “bodies upon the gears” speech was given in this state after the arrest of activist Jack Weinberg at one of this state’s universities. One riot in this state began at a cafeteria and was sparked when a drag queen threw coffee in the face of a police officer. Tort law in this state was greatly expanded by its former Chief Justice, Roger Traynor. One city in this state was home to a radical theater group called the “Diggers,” as well as the first free clinic. Mario Savio organized the Free Speech Movement in this state. A university in this state controversially rejected the application of a NASA engineer who had served in Vietnam and was told by Lewis Powell that while “plus factors” were allowed, it could not reserve 16% of seats in its medical school for minorities because quotas violated the constitution. For 10 points, name this state sued by Bakke and formerly governed by Ronald Reagan.

ANSWER: California

2. Two angels argue over a sheet of music in the bottom left of this artist’s *Mystical Marriage of St. Catherine*. Haman, rendered from a below-ground perspective, is about to fall off of his black horse in this artist’s *Triumph of Mordecai*, located on the ceiling of the Church of Saint Sebastian. He painted himself playing a viola da braccio and Jacopo Bassano playing a violin behind two white dogs in the center of a 21 by 32 foot behemoth originally located in San Giorgio Maggiore. A female representation of the title city is seated on a throne of clouds and crowned by an angel in his oval painting on the ceiling of the Palazzo Ducale. Three arches divide a painting that this artist refused to purge of “buffoons, drunken Germans, [and] dwarfs” when the Inquisition came knocking, simply changing the title from *The Last Supper*. For 10 points, name this Venetian painter of *The Wedding at Cana* and *Feast in the House of Levi*.

ANSWER: Paolo Veronese [or Paolo Caliari]

3. One character in this novel provides comic relief by flinging cucumbers and vegetable marrows into the garden of a widow he wishes to court. The sixth chapter of this novel includes the episodic tales “The Five Sisters of York” and “The Baron of Grogzwig.” One character in this novel finds work with the milliner Mrs. Mantalini and rebuffs the advances of the lecherous Mulberry Hawk. The benevolent Cheeryable brothers assist this novel’s main character, who briefly joins the acting troupe of Vincent Crummles. Another of its characters, Arthur Grime, conspires to marry Madeline Bray, although she ends up marrying the title character instead. This novel’s title character provides for his sister Kate and liberates his best friend Smike from the brutal Dotheboys Hall boarding school. For 10 points, name this novel by Charles Dickens whose title character overcomes his evil uncle Ralph and Wackford Squeers.

ANSWER: *The Life and Adventures of* Nicholas Nickleby

4. Utilities like CRED and TinyCC produce these phenomena as safety measures, while the similar utility ProPolice produces one when it discovers that the “terminator” or “random” canaries have been overwritten. In x86 Linux, a message alerting the user to this situation is mislabeled, instead suggesting a related “page protection” phenomenon. One way to produce this situation is to not keep track of the return value of the function malloc. Its cause can be ascertained by backtracing a core file using a debugger. In C, this error is often caused by dereferencing a null pointer or by a stack overflow. For 10 points, name this unwanted situation, also known as a bus error, which occurs when a program tries to access memory that the CPU cannot address.

ANSWER: segmentation fault [or segfault; or access violation; accept bus error before read; prompt on fault]

5. In October 2007, employees of this agency posed as reporters to give “softball” questions to Deputy Administrator Harvey Johnson. An administrator for it sent e-mails saying “I am a fashion god” and “Can I go home?” and received advice to roll up his sleeves “to look more hard-working.” In 1992, Kate Hale criticized this agency with her exclamation, “Where in the hell is the cavalry on this one?” A head of this agency was once the Judges and Stewards Commissioner for the International Arabian Horse Association. It was mocked in 2005 after George W. Bush said “Brownie, you’re doing a heck of a job” in the midst of inefficient responses to Hurricane Katrina. For 10 points, name this federal agency created to coordinate responses to disasters in the United States.

ANSWER: FEMA [or Federal Emergency Management Agency]

6. This work cites Fromm's claim that "control is necrophilic." It argues that humans are generally unable to transcend "limit-situations" and discover an "untested feasibility" on their own. While demanding praxis, this book denigrates enrichment through action alone as mere activism; instead, it calls for the creation of so-called codifications through reflective, dialogic participation in the structure at the center of the author's system, the culture circle. A strong critique of what it calls the "banking model," this work instead demands the ability to read the world, as well as the word, through a model that treats the learner as a co-creator of knowledge. For 10 points, name this book on education by Paulo Freire.

ANSWER: The Pedagogy of the Oppressed [or Pedagogia do Oprimido]

7. The free and slave populations of this modern day country were stratified in a 1784 black code named for Charles III. A secret society known as The Trinity fought for this nation's independence. Gregorio Luperon served as president of this country after leading it during the Restoration War, during which it fended off recolonization. Juan Pablo Duarte helped write this nation's first constitution. This nation's Civic Movement overthrew Horacio Vasquez, who had been democratically elected after several years of control by the United States Military. One long-term president of this nation hired Johnny Abbes as police chief and was termed by Cordell Hull "our son of a bitch." That president ordered the Parsley Massacre. For 10 points, name this country ruled by Rafael Trujillo.

ANSWER: Dominican Republic [or Republica Dominicana]

8. This entity is analogous to the 2-space potential flow stream function; in both cases, the associated fields are solenoidal. In cgs units, this quantity is given by the relativistic beta at the retarded time times its energy-like companion field, according to the Liénard-Wiechert potential equations. In the non-relativistic case in cgs units, this field is the integral over all space of the current density divided by the distance to the field point. The space-like part of the four-potential, this quantity is unique only up to the gradient of a gauge function. For 10 points, name this vector quantity symbolized  $\mathbf{A}$ , the curl of which is the magnetic field.

ANSWER: magnetic vector potential [or magnetic potential; prompt on  $\mathbf{A}$ ]

9. The opening bars of this symphony were written after its composer visited the chamber in which the lutenist David Rizzio was murdered. In the coda of its first movement, dramatic rising and falling chromatic scales in the strings evoke a sudden storm. Its second movement, a scherzo in 2/4 time, includes a solo clarinet melody whose extra final accent recalls traditional snap rhythms. Horn signals and timpani evoking cannon fire punctuate this symphony's fourth movement, which its composer originally marked "allegro guerriero" due to its war-like themes. Despite its numbering, this symphony was the fifth and last by its composer to be completed. It was conceived on a trip to a ruined chapel at the Holyrood Palace. For 10 points, name this Mendelssohn symphony inspired by a journey that also led him to compose the Hebrides Overture.

ANSWER: Scottish Symphony [or Mendelssohn's Symphony No. 3 in A Minor, Op. 56; or descriptive answers such as Mendelssohn 3; prompt on Third Symphony or the like until Mendelssohn is mentioned]

10. The main character of this novella steals cherries from a refrigerator stocked with heaps of fruit before spitefully destroying his girlfriend's sister Julie in a game of ping-pong. Its supporting characters include an unnamed black child who enjoys going into a library to look at Gauguin paintings. The protagonist of this novella spends much time at the affluent suburban neighborhood of Short Hills, and is last seen returning to Newark after his girlfriend's parents discover her diaphragm. This novella traces the progress of the relationship between Brenda Patimkin and Neil Klugman, and takes its title from a record Ron owns commemorating his graduation ceremony at Ohio State. It also titles a collection which includes the stories "Defender of the Faith" and "The Conversion of the Jews." For 10 points, name this novella that titles the first book by Philip Roth.

ANSWER: Goodbye, Columbus

11. In an alternate story of this man's actions, his crime is given to another man named Samiri. In one story, this man stands between the living and the dead in order to stop a plague begun after the rebellion of Korah. In one account, this man dies on Mount Hor shortly after his garments are transferred to his son, Eleazar. His sons Nadab and Abihu are killed after they add unauthorized fire in a worship ceremony. This man claims that he took gold jewelry and threw it into a fire, which produced an infamous icon associated with him. He is first introduced after another figure complains about being "slow of speech and tongue" and thus requiring a spokesman. He constructs a Golden Calf as an idol during his brother's absence, and one object owned by this man turned into a snake to demonstrate the power of God.. For 10 points, name this first Israelite high priest, who had a namesake rod and was the older brother of Moses.

ANSWER: **Aaron**

12. At a party, a character in this movie talks about such crackpot ideas as "harnessing the life force" and "being able to smell a flower on the planet Mars." Its villain is delayed when he drops a cigarette lighter inscribed "A to G" down a storm drain. One of its characters almost strangles Mrs. Cunningham after he sees Barbara, whose eyeglasses send him into a trance. At the end of this movie, the two main characters fight on an out-of-control carousel. Its plot is set in motion when a character travels to an amusement park in Metcalf and murders Miriam. In one scene, its villain is the only person not to move his head from side to side while watching a tennis match. This movie begins with Guy Haines meeting the disturbed Bruno Anthony, with both characters discussing how they hate respective family members. For 10 points, name this Alfred Hitchcock movie about a plan to "swap murders" concocted on the title mode of transportation.

ANSWER: **Strangers on a Train**

13. In order to fix a defect with this theory, the "harpoon mechanism" has been proposed for the reaction between potassium and diatomic bromine. One constant involved in this theory is equal to Avogadro's constant times the cross section times the square root of 8 times the Boltzmann constant times temperature over pi times the reduced mass. When this theory is applied to systems in solution, solvent cage effects must be taken into account. In its fundamental equation, the frequency Z is multiplied by the steric factor and e to the negative activation energy over RT. Proposed by William Lewis and Max Trautz, it holds that the activation energy barrier will be overcome if the namesake angular-momentum-preserving phenomenon is "successful." For 10 points, name this theory that explains reaction rates in terms of reactant molecules hitting each other.

ANSWER: **collision** theory

14. Nicholas Udall modeled Ralph Roister Doister directly after this play's main character. At the end of this play, its main character is roughed up and threatened by Canio, but is set free after promising to pay a golden mina. A woman in this play uses a hole in a house to convince Sceledrus that she is her sister Dicea. This play's main character was modeled on the Greek *alazon* and is accused of adultery after being tricked by the prostitute Acroteleutium. Throughout this play, Palaestrio plots to reunite Pleusicles and Philocomasium, who is being held captive in the title character's house. In its first scene, the parasite Artotrogus butters up the title character, who calls himself the grandson of Venus. For 10 points, name this comedy by Plautus about Pyrgopolynices, the title braggart soldier.

ANSWER: **Miles Gloriosus** [accept *The Braggart Soldier* or *The Swaggering Soldier* before "braggart"]

15. A folk song titled for this battle's "water" erroneously claims Eugene of Savoy was present at it. As the losing army retreated from this battle, it was nearly cut off at Naul by a force that missed this battle. Early in this battle, Patrick Sarsfield reported the existence of a swampy ravine neither side knew about, but not before both sides had uselessly sent forces into the Roughgrange. George Walker was killed in this battle while trying to help the wounded Duke of Schomberg, who died here. The outcome of this battle secured the work of the "Immortal Seven" and is celebrated during the "Glorious Twelfth." A decisive attack at this battle was made by the elite Blue Guards. The losing commander was nicknamed "a'chaca" for his retreat, which translates as "the shit." For 10 points, name this 1690 battle fought near the namesake Irish river, at which William of Orange's forces defeated those of the deposed James II.

ANSWER: Battle of the **Boyne**

16. The first conclusive proof that genetic risk factors heavily influence this disease came when Kristina Sandquist evaluated the family histories of 80,000 people who developed it in Sweden. Tests for this disease include electron-beam computed tomography to evaluate the presence of calcium. A nuclear stress test performed to screen for this disease will show a depressed ST segment. Most people who undergo the Prinzmetal's angina suffer from this disease, whose acute form manifests with unstable angina, Q wave MI, and non-Q wave MI. This disease was the subject of a namesake West of Scotland Prevention Study, in which men who were prescribed pravastatin had a lower risk of dying from it. An adjacent "left circumflex" structure might be affected by this disease, which involves atherosclerosis in the namesake blood vessel. For 10 points, name this leading cause of death among American adults, in which the heart musculature doesn't get supplied by the blood it pumps.

ANSWER: coronary artery disease [or coronary heart disease; accept coronary atherosclerosis before "atherosclerosis" is read; prompt on heart disease.]

17. This entity is watched over by the flapping eagle Hraesvelg and served by the chronically lazy servants Ganglati and Ganglot. A linen smock and the ring Draupnir were found here by the bearer of the staff Gambantein. Outside this location is a bridge thatched with gold and guarded by the maiden Modgud. It is either a sub-realm of or contains a hall called Eljudnir and is encircled by a stream stemming from Hvergelmir known as Gjoll. For 10 points, name this realm to which Hermod was sent, a cold region guarded by Garm and home to the youngest offspring of Angrboda.

ANSWER: Helheim

18. This person was supposedly dropped on the floor by a wetnurse, breaking a shoulder bone and leaving one shoulder always higher than the other. This ruler sent Johan Salvius to negotiate one treaty, and caused a scandal by admitting him to the national council despite his low birth. This ruler's other advisors included John Casimir, the Count of Kleeburg. Mazarin devised a plot to place this person on the throne of Naples, which resulted in the murder of Gian Rinaldo Monaldeschi, the lover of this ruler. Rene Descartes died shortly after making a famous visit to this queen, who signed the Treaty of Osnabruck. In 1654, her regalia was ceremoniously removed from her body, completing an action advised against by Axel Oxenstierna. For 10 points, name this daughter of Gustavus Adolphus, a Swedish queen who abdicated the throne to convert to Catholicism.

ANSWER: Christina Augusta [or Christina Alexandra]

19. One section of this book discusses a class of students who claim that Americans resemble the culture of the Kwakiutl instead of the Pueblo. Its eighth chapter distinguishes between the political styles of indifferent, moralizers, and inside-dopesters. This book includes a section analyzing the shift from "the invisible hand to the glad hand," and ends with chapters describing obstacles to personal autonomy at work and at play, such as the tyranny of the peer group. It begins by linking patterns of population growth to social traits, and argues that societies with declining birth rates produce individuals who seek validation rather than esteem and are metaphorically equipped with radar instead of gyroscopes. Written along with Reuel Denney and Nathan Glazer, it analyzes the transition from "inner-directed" to "other-directed" character types. For 10 points, name this analysis of postwar American life written by David Riesman.

ANSWER: *The Lonely Crowd: A Study of the Changing American Character*

20. This man's mistress is the subject of Denzil Romero's erotic novel *The Wife of Dr. Thorne*. This man's enemies jeer at him by yelling "Sausage liliink!" in another novel, in which he is treated by the eccentric Hercules Gastelbondo. In that novel, he has an extended conversation with Diocles Atlantique in which he exclaims "let us have our Middle Ages in peace!" A novel named for him describes how his entourage spends three days partying in Honda, although he spends all of that time physically deteriorating to the point where he is mistaken for his aide-de-camp, Jose Palacios. In that novel, he writes many letters to his longtime lover Manuela Saenz and flies into a rage upon hearing of the assassination of Sucre during his journey to flee to Europe. For 10 points, name this historical figure and title character of Gabriel Garcia Marquez's novel *The General in His Labyrinth*.

ANSWER: Simón José Antonio de la Santísima Trinidad Bolívar y Palacios Ponte y Blanco [or the Liberator; accept *The General in His Labyrinth* or *El general en su laberinto* before read; prompt on General]

## Bonuses

1. This character was inspired by the prima donna Francesca Cuzzoni, whose highly publicized catfight with Faustina Bordoni inspired a scene in which she is offered a poisoned drink by Lucy Lockit. For 10 points each:  
[10] Name this woman married to a highwayman whose hanging is commuted because the play requires a happy ending.

ANSWER: Polly Peachum [or Polly Peachum; prompt on Peachum]

[10] Polly Peachum and Macheath are characters in this “ballad opera” by John Gay, which inspired Brecht and Weill’s musical *The Threepenny Opera*.

ANSWER: *The Beggar’s Opera*

[10] This manager made so much money producing *The Beggar’s Opera* that he built the first theatre at Covent Garden. He started out as an actor playing Harlequin under the stage name “Lun,” and popularized pantomime in English theater.

ANSWER: John Rich

2. This man’s wife is called “Ri Sol-ju,” though it is almost certainly a pseudonym, and many believe that she is actually a singer and that the government is destroying evidence of her past identity. For 10 points each:

[10] Name this Supreme Leader of North Korea.

ANSWER: Kim Jong-un [prompt on partial answer]

[10] North Korea may be planning a test of this mobile mid-range missile, first revealed in 2010. This missile may have a range of about 4,000 kilometers, and may one day be fitted with nuclear warheads.

ANSWER: Musudan [or BM-25; or Taepodong X; or Nodong-B; or Mirim; do not prompt on “Taepodong” or “Nodong” alone]

[10] Early in April 2013, this European head of government was criticized when he gave a speech claiming, almost certainly incorrectly, that North Korean missiles could reach his country.

ANSWER: David William Donald Cameron

3. Along with a colleague, this man wrote the so-called “Bible of Sociology,” *Introduction to the Science of Sociology*. For 10 points each:

[10] Name this pioneering urban sociologist who collaborated with Robert Park. He created the “concentric zone” model of cities that placed suburban zones on the fringes of a central business district.

ANSWER: Ernest Burgess

[10] Burgess was a faculty member at this university’s sociology department. A group of Chilean economists who studied under Milton Friedman were colloquially known as this university’s “boys.”

ANSWER: University of Chicago

[10] This more recent urban sociologist wrote about urban poverty in such books as *When Work Disappears* and *The Truly Disadvantaged*. He claimed that class is more important than race in determining one’s life chances in *The Declining Significance of Race*.

ANSWER: William Julius Wilson

4. John Foxe said this man’s last words were “I am faint; Lord have mercy upon me, and take my spirit.” For 10 points each:

[10] Name this third Tudor monarch, who died at age fifteen after succeeding his father, Henry VIII.

ANSWER: Edward VI [prompt on Edward]

[10] As a child, Edward was betrothed to the infant Mary, Queen of Scots. From 1543 to 1550, Henry VIII waged this colloquially named conflict with Scotland to force the union.

ANSWER: War of the Rough Wooing

[10] During this 1549 revolt against Edward VI, rebel farmers stormed Norwich, but were ultimately defeated by the Earl of Warwick at the Battle of Dussindale. Its namesake was a yeoman.

ANSWER: Kett’s Rebellion

5. This man died after stepping on a landmine in the First Indochina War. For 10 points each:

[10] Name this Hungarian photographer who is credited with photographing a dying militiaman in a work known as *Falling Soldier*. That work's true origins have been long disputed.

ANSWER: Robert Capa [or Endre Erno Friedmann]

[10] A darkroom technician accidentally destroyed all but eleven photographs Capa took of this event, which served as a visual inspiration for the opening sequence of a 1998 Steven Spielberg film starring Tom Hanks.

ANSWER: D-Day [or Invasion of Normandy; or Operation Overlord]

[10] Capa was a co-founder of this international photography cooperative along with men like David "Chim" Seymour and George Rodger. Another member of this group, Eve Arnold, took iconic photos of Marilyn Monroe during the filming of *The Misfits*.

ANSWER: Magnum Photos

6. The bizarrely Platonic metaphor of a chain gang in which prisoners can move freely if they are close, but cannot escape, is often used to describe this phenomenon. For 10 points each:

[10] Name this phenomenon, the explanation of which won the 2004 Nobel Prize in Physics. In it, the strong force decreases with distance between quarks.

ANSWER: asymptotic freedom

[10] Asymptotic freedom arises naturally when one notes that this value, denoted  $g$ , decreases logarithmically with wave number in QCD. In general, these are dimensionless numbers that indicate the strength of an interaction in a quantum field theory, such as the fine structure constant for electrodynamics.

ANSWER: coupling constant

[10] Asymptotic freedom is a feature of QCD and other quantum gauge theories with this gauge group. It is the group of all 2-by-2 complex matrices with determinant 1.

ANSWER: SU(2) [or special unitary group of degree 2]

7. It is synthesized endogenously from arginine and oxygen via its namesake synthase. For 10 points each:

[10] Name this small molecule, a vasodilator that interacts with guanylate cyclase to trigger the release of a cyclic GMP cascade.

ANSWER: nitric oxide [or NO; or nitrogen oxide; or nitrogen monoxide]

[10] Nitric oxide signaling is strengthened by the phosphodiesterase inhibitor sildenafil citrate, a drug sold for pulmonary hypertension under the name Revatio and for erectile dysfunction under this more famous trade name.

ANSWER: Viagra

[10] Nitric oxide can activate this DNA transcription-regulating complex whose family members are homologous to *rel*. It activates in response to inflammation by mobilizing cytokines, chemokines, pro-survival factors, and more.

ANSWER: NF- $\kappa$ B [or NF- $\epsilon$ B; or nuclear factor kappa-light-chain-enhancer of activated B cells]

8. From 1856 to 1896, this man wrote program notes for weekly concerts at the Crystal Palace. For 10 points each:

[10] Name this Victorian music critic who wrote *Beethoven and His Nine Symphonies* and a namesake *Dictionary of Music and Musicians*.

ANSWER: George Grove

[10] In 1883, Grove became the first director of this English conservatoire, where professors such as Hubert Parry and Charles Villiers Stanford taught English composers like Samuel Coleridge-Taylor and Gustav Holst. It is located directly opposite the Royal Albert Hall.

ANSWER: Royal College of Music [or RCM]

[10] Another student at the Royal College of Music was this composer of *The Lark Ascending* and *Fantasia on a Theme of Thomas Tallis*.

ANSWER: Ralph Vaughan Williams

9. Hiroshi Teshigahara directed a version of this author's play about a miner's strike called *Pitfall*. For 10 points each:

[10] Name this surrealist Japanese author who wrote about entomologist Niki Jumpei, who becomes trapped in a sand pit, in his novel *The Woman in the Dunes*.

ANSWER: Kobo Abe [or Kimifusa Abe]

[10] In this 1959 novel by Abe, a scientist becomes horribly disfigured in a laboratory accident, and then fashions a mask that eventually takes over his identity.

ANSWER: *The Face of Another* [or *Tanin no kao*]

[10] Abe won the January 1951 Akutagawa Prize for this novella, in which a man wakes up to find that he can't remember his own name and discovers that his position at his office has been usurped by his business card.

ANSWER: *The Crime of S. Karuma* [or *Kabe-S. Karuma shi no hanzai*]

10. A Spanish proverb says that to be "worth a" this city is to be worth a fortune. For 10 points each:

[10] Name this city in Bolivia that was the location of the Spanish colonial mint and the major supplier of silver for Spain during their colonial empire days. The mines here were mythically founded by Huayna Capac.

ANSWER: Potosi [do not accept "San Luis Potosi"]

[10] Huayna Capac's favorite son was this dude, who warred with his brother Huascar. He triumphed in that conflict only to be captured by treasure-crazed Francisco Pizarro, who took this guy's treasure and then killed him anyway.

ANSWER: Atahualpa

[10] This opponent of the Incas included such cities as Chan Chan and such rulers as Tacaynamo. The last major opponents of the Incas, they were conquered by Tupac Inca and Huayna Capac.

ANSWER: Chimu [or Chimor]

11. This artist likened color to a keyboard one plays "to cause vibrations of the soul" and explained that his creative awakening came when he entered his studio to discover one of his paintings lying on its side. For 10 points each:

[10] Name this artist who expanded on his Theosophically-inspired philosophy of art in his treatises *Point and Line to Plane* and *Concerning the Spiritual in Art*.

ANSWER: Wassily Wassilyevich Kandinsky

[10] This art movement, led by men like Franz Marc, takes its name from an expressionist Kandinsky painting set in a green meadow occupied by a lone horseman.

ANSWER: The Blue Rider [or Der Blaue Reiter]

[10] This other Russian member of The Blue Rider and the Blue Four painted a series of *Variations* from his window during World War I. Influenced by Orthodox icons, this former soldier painted the *Abstract Heads* series.

ANSWER: Alexej Georgewitsch von Jawlensky

12. Apollodorus, Hyginus, and Hesiod all agree that the minor Euboean king Elphenor was a member of this group. For 10 points each:

[10] Name this group of people bound by the oath of Tyndareus, which this group's eventual victor, Menelaus, invoked after Paris kidnapped the Queen of Sparta.

ANSWER: suitors of Helen [accept close equivalents]

[10] This surgeon son of Asclepius was rejected by Helen. During the Trojan War, he healed the grievous wounds of Menelaus and Philoctetes. He hid in the Trojan Horse, but was killed by either Eurypylos or Penthesilea.

ANSWER: Machaon

[10] In his play *Helen*, Euripides alleges that Hera fashioned a cloud-based eidolon of Helen and that the real Helen spent the entirety of the Trojan War in this place, where Menelaus finds himself shipwrecked in *The Odyssey*.

ANSWER: Egypt

13. This type of map is both one-to-one and onto, or in other words, this is a bijective homomorphism. For 10 points each:

[10] Name this relationship between two mathematical objects that thus have the same structure.

ANSWER: **isomorphism**

[10] The first isomorphism theorem states that the image of a homomorphism is isomorphic to the quotient group of the codomain modulo this subgroup of the codomain. For any map, this is the set of elements mapped to zero; for example, for a matrix A, it's all vectors such that  $Ax = 0$ .

ANSWER: **kernel**

[10] The kernel of a homomorphism is specifically this type of subgroup of the codomain according to the first isomorphism theorem. The third group isomorphism theorem applies to subgroups with this property. Subgroups with this property are invariant under conjugation with respect to the corresponding supergroup.

ANSWER: **normal** subgroups

14. This writer used his two stints in jail for criticizing the Nazi Party as the basis for his plotless short story about a man thrown in a jail cell called "The Dandelion." For 10 points each:

[10] Name this German author who wrote a radio drama about the return of the soldier Beckmann entitled *The Man Outside*. He died at the age of 26 in a Swiss sanatorium.

ANSWER: Wolfgang **Borchert**

[10] Wolfgang Borchert was a prominent practitioner of "rubble literature," which was championed by this post-war German author of *The Clown* and *Billiards at Half-Past Nine*.

ANSWER: Heinrich Theodor **Boell**

[10] Long after rubble literature went out of fashion, Heinrich Boell wrote this documentary-style novel about Leni Pfeiffer, who tries to prevent the demolition of her Cologne apartment building.

ANSWER: **Group Portrait with Lady** [or **Gruppenbild mit Dame**]

15. The key religious leader in this polity was the Archbishop of Freiburg. For 10 points each:

[10] Name this grand duchy in southern Germany, which unlike its neighbor Bavaria is largely Protestant..

ANSWER: **Baden**-Wuerttemberg

[10] In 1803, Charles Frederick of Baden was given various districts thanks to the support of this Russian monarch, best known for fighting at Austerlitz and opposing Napoleon Bonaparte. .

ANSWER: **Alexander I** [prompt on **Alexander**]

[10] Baden is home to the town of Constance, where both Jan Hus and this deputy of his were burned at the stake.

ANSWER: **Jerome** of Prague [or **Jeronym** Prazsky]

16. A bubble at the edge of this region was recently deduced by Bill Webber using data from Voyager I. For 10 points each:

[10] Name this region of space dominated by the Sun. Most particles encountered in this region originate from the Sun.

ANSWER: **heliosphere**

[10] On March 20, Voyager I crossed this boundary, the edge of the heliosphere bubble, where interstellar medium radiation abruptly becomes dominant.

ANSWER: **heliocliff**

[10] The heliosphere was expected to exhibit one of these sharp standing waves at the inboard side of the heliosphere, but one was not found because the Sun's velocity with respect to the interstellar medium is too low. Planets with strong magnetic fields create these on the side facing the solar wind as the solar wind abruptly slows.

ANSWER: **bow shock** [prompt on **shock**; do not accept "termination shock"]



17. This character eventually becomes a partner of Judge Henry. For 10 points each:

[10] Name this character who marries the schoolteacher Molly Wood and kills his nemesis, the gambler Trampas. At one point, he warns Trampas by saying “When you call me that, *smile!*”

ANSWER: Virginian

[10] *The Virginian* inspired this author to write numerous Westerns of his own, including *The Last of the Plainsman* and *Riders of the Purple Sage*.

ANSWER: Pearl Zane Grey

[10] In *Riders of the Purple Sage*, the Mormon church attempts to gain control of the Amber Spring by forcing this woman to marry Elder Tull. However, she is protected by the legendary Mormon-murdering gunman Lassiter.

ANSWER: Jane Withersteen [or Jane Withersteen]

18. Variants of this problem allow one to act by pushing a fat man or a fat villain. For 10 points each:

[10] Name this philosophical problem first proposed by Philippa Foot. It asks if it is morally right to flip a switch in order to kill one person, or not to act and allow five to die.

ANSWER: trolley problem [or tram problem]

[10] One solution to the trolley problem relies on this moral doctrine, according to which a normally moral action with bad side results may still be acceptable given three criteria. In the original formulation, homicide in self-defense may be acceptable if the actor intends the good effect, and the good effect outweighs the bad.

ANSWER: the doctrine of double effect [or principle of double effect or rule of double effect]

[10] The doctrine of double effect originates in *Summa Theologica*, which is by this moral philosopher.

ANSWER: St. Thomas Aquinas

19. Answer the following about Loyalists during the American Revolution. For 10 points each:

[10] Loyalist writer James Chalmers, using the alias “Candidus,” wrote the pamphlet *Plain Truth*, a rebuke of this author’s anti-British screed *Common Sense*.

ANSWER: Thomas Paine

[10] This man served as a liaison between the British and Native American allies during the Revolution, and was infamously present during William Crawford’s torture and execution. Viewed as a turncoat by frontiersmen, he was portrayed as a “white savage” in Benet’s story “The Devil and Daniel Webster.”

ANSWER: Simon Girty

[10] This 1816 Supreme Court case involved the state of Virginia’s attempt to confiscate Loyalist property. More importantly, it signified the Supreme Court had authority over state courts involving federal law matters.

ANSWER: Martin v. Hunter’s Lessee [accept in reverse order]

20. Answer the following about the most Sunni of Islam branches, Sunni Islam. For 10 points each:

[10] The word “Sunni” comes from the term sunnah, which refers to the practices of Muhammad. Sunnah is frequently synonymous with this term, which refers to the sayings of Muhammad used within Islamic schools of jurisprudence.

ANSWER: hadith

[10] Sunni Islam, like other branches, believes in the concept of tawhid, which is a belief in this principle.

ANSWER: monotheism [accept things like the only god is Allah, oneness, or other obvious statements]

[10] This school within Sunni Islam disagrees with the reason-minded Hanafite school and the broader, middle school. This school insists on sticking to the clear meaning of expressions in the Koran and is tradition-focused.

ANSWER: Zahiri [or Dhahiri]

21. Over 90% of its industrial use is for the generation of adipic acid and caprolactam for nylon manufacture. For 10 points each:

[10] Name this cyclic alkane with formula C<sub>6</sub>H<sub>12</sub>.

ANSWER: cyclohexane

[10] The preferred conformation of cyclohexane is this one that has its hydrogens staggered. At room temperature, this conformation rapidly interconverts its equatorial and axial substituent atoms in a ring flip.

ANSWER: chair conformation

[10] The chair conformation extends to this simplest diamondoid molecule with formula C<sub>10</sub>H<sub>16</sub>.

ANSWER: adamantane