

Cardinal Classic XIII: The Legend of Zwarte Piet
Round 2

Berkeley Tossups – written by Jerry Vinokurov, Brendan Shapiro, Devang Parekh, and Chris Nguyen

1. An easy demonstration of it involves a water tank with two holes in it at different altitudes. It also explains why windows of houses caught in hurricanes explode rather than implode. It is obtained through integration of the equation of motion along the coordinate direction of the streamline, and its application is limited when compressibility, unsteady flow, and rotational effects are present. FTP, what is this law of fluid dynamics which states that as the velocity of a fluid increases, its pressure decreases.

Answer: Bernoulli's Principle (or Equation)

2. All in all, about two thousand people participated in it. The committee investigating its aftermath found guilty not only those who actually took part, but even those who had discussed it without participating. At first, the participating soldiers thought they would be led by Prince Trubetskoi, but he was not present so command devolved to Prince Obolenskii. Doomed to failure for lack of a unified command, FTP, what is this 1825 uprising in which Russian officers marched in the Senate Square in Moscow demanding constitutional reform from Czar Nicholas I, named for the month in which it took place?

Answer: Decembrist Revolt (or Uprising)

3. Among the secondary characters on this show, the best show on television, are Taylor, the town magistrate, who owns Dosie's market, Lane, the Korean girl who wants to be a drummer, and Paris, the Chilton high school student government president. Primarily set in Star's Hollow, Connecticut, other characters include Luke and his nephew, Jess, who are into the two main characters, Lorelai and Rory who are portrayed by the supremely talented actresses Lauren Graham and Alexis Bleidel. FTP, identify this critically-acclaimed WB show about a single mother and her teenage daughter.

Answer: Gilmore Girls

4. The daughter of an English soldier and a Spanish singer, she was formerly a popular singer and devoted mother, but now appears to spend most of her time in bed. After her husband comes home, she remembers her affairs with numerous men, including Blazes Boylan, and contemplates seducing her new Italian teacher, Stephen Daedalus. FTP, name this Gibraltar native from James Joyce's *Ulysses*, the wife of Leopold Bloom.

Answer: Miriam or Molly Bloom (prompt on Bloom)

5. He appears in Herman Hesse's *Journey To The East* along with Albertus Magnus and Mozart. He began painting in the late 19th century, and by 1911 he became associated with the Blaue Reiter group. His works have such unusual titles as *Virgin in a Tree* and *Two Men Meet, Each Believing the Other to be of Higher Rank*. Following WWI, he taught at the Bauhaus, where he wrote *Pedagogical Sketches*, a set of radical new ideas in art theory. FTP, name this Swiss painter of *Still Life*, *Red and White Domes*, and *Twittering Machine*.

Answer: Paul Klee

6. After leaving Cambridge in the early 1920's he worked as a schoolteacher in Austria, where he garnered much attention for his unorthodox teaching methods, such as teaching biology by reconstructing a cat's skeleton and pulling a little girl's hair when she couldn't grasp higher algebra. His other occupations included being a soldier in the Austrian army, architect for his sister's Vienna mansion and lecturer at Cambridge, where he composed his *Philosophical Investigations*. FTP, name this logician, student of Bertrand Russell, and author of *Tractatus Logico-Philosophicus*.

Answer: Ludwig Wittgenstein

7. The attackers under the Duke of Cumberland commenced their march towards the defenders' position at 5 A.M. By 11 A.M. the two armies were arrayed against each other and the battle began at 1 P.M. when the Jacobite artillery opened fire. However the Hanoverian grapeshot proved the superior cannon and the frustrated highlanders charged the enemy, resulting in 1200 casualties for the Stuart army. FTP, Charles Edward Stuart, better known as "Bonnie Prince Charlie" saw his attempt at the English throne thwarted by William Augustus at what April 16th, 1746 battle?

Answer: Culloden Moor

8. Although it occurs most often in marine conditions, it is essentially absent in fresh water, even in Lake Baikal. In the Indian ocean, it is responsible for the “milky sea” phenomenon. In dinoflagellates, it is triggered by mechanical deformation of the cell surface which causes an action potential to sweep over the vacuole membrane. The primary source of light in the deep ocean, FTP, identify this phenomenon which on land manifests itself as “foxfire” and in a few families of insects such as fireflies.

Answer: bioluminescence

9. Two cliffs can be seen in the background, while a man nailed to a cross is seen off-center. In the foreground, women stand to the right and men to the left as clergy and noblemen stand around the central action. FTP, name this 1849 oil on canvas painting by Gustave Courbet which depicts an interment.

Answer: Burial at Ornans

10. The Jews become Moishians; the Japanese, Amaterasus; and the Germans, Siegfrieders. The book contains a preface from the author claiming that the book came to him from a descendant of the Grand Tutor. The title character is raised as a barn animal by Max Spielman, but upon discovering the human society that is New Tammany College, decides to take on the mission of destroying the great computer WESCAC. FTP, identify this 1966 novel which transposes the major political events of the twentieth century into a college setting, written by John Barth.

Answer: Giles Goat-Boy

11. Unlike the majority of Western African tribes, they have a historical tendency to form urban communities, resulting in cities like Ibadan and Abeokuta. Some of its most famous members include Sade (SHA-DAY), Wole Soyinka, and Hakeem Olajuwon. Their Oyo kingdom ruled most of modern day Benin and Nigeria, but began to unravel due to internal unrest and slave trading after 1700. FTP, name this large tribe of southwestern Nigeria.

Answer: Yoruba

12. Its name derives from the fact that it supposedly occupies the site of an ancient Greek colony. In the 14th century, it became a fortress under Lithuanian control, and in 1764, it passed to the Turks, who lost it to Russia in 1789. A center of cultural life and social democracy, it saw the *Potemkin* uprising in 1905 and was occupied by Romanian forces from 1941 to 1944, during which time almost 300,000 Jews were killed there. FTP, identify this Black Sea port, today the second largest city in the Ukraine.

Answer: Odessa

13. The place where much of the action takes place, Emain Macha, is today a complex of earthworks around the town of Navan. The druid Cathbad raises one of its main heroes, the king Conchobor mac Nessa, but its tales center around another hero. It also chronicles the sad story of Dierdre and the rise to power of Queen Medb of Connacht, which culminates in the famous Cattle Raid of Cooley. FTP, identify this cycle of Irish myths which chronicles the adventures of Cuchulain and is named after the kingdom (and now province of Ireland) where the action takes place.

Answer: The Ulster Cycle (accept just Ulster after the word cycle is mentioned; also accept Cattle Raid of Cooley throughout the first sentence, but not after)

14. His grandfather wrote the first code of his people, called the Yasa, and it was during his time that his empire's forces suffered their first military defeat. He was supported by his brother Hulagu against his cousin Berke, who was in charge of the occupying army in Russia. In 1274 and 1281, his forces were thoroughly defeated at the battle of Hakata Bay, ending his ambitions to conquer Japan. FTP, identify this grandson of Genghis who, according to Coleridge, decreed a “stately pleasure dome” in Xanadu.

Answer: Kublai Khan

15. The foundation for its invention was laid down through a discovery made by Russel Ohl. Some versions contain a gate, source, and drain and are based on the principle of field effect. Earlier versions consisted of sandwiched layers of either p-n-p or n-p-n semiconductor junctions; these bipolar junction types share the names of the three terminals—collector, emitter, and base—with the point-contact type, the first to be developed. FTP, what is this electronic circuit element invented by Bardeen, Brattain, and Shockley, which replaced the vacuum tube?

Answer: transistor (accept point-contact transistor early until “gate”)

16. Eilif is a brutal commander whose rise to power involves murderous raids on the peasant populace in order to keep his men fed. Swiss Cheese is excessively dutiful and honest, virtues instilled in him by his mother and which cost him his life. Katrin cannot speak but in the end, heroically climbs onto a roof and bangs a loud drum to save a town. All of these people are children of FTP, what literary title character who makes her living profiting from the Thirty Years' War, created by Berthold Brecht?

Answer: **Mother Courage** (and her Children) [accept either character or title]

17. Unlike proteins such as myoglobin, which can distinguish between oxygen and carbon dioxide based on size, it is fairly indiscriminate, which sometimes causes it to attach an oxygen to the sugar chain, forming a faulty oxygenated product. It processes a mere 3 molecules per second, making it one of the slowest enzymes. The limiting step in the photosynthetic assimilation of carbon dioxide and composing about 60% of soluble leaf protein, FTP, what is this most abundant enzyme on earth, whose common name is short for ribulose 1,5 biphosphate carboxylase?

Answer: **rubisco** (accept the full name before it is mentioned)

18. Formed in 1974 by a failed art student and a Playboy Bunny turned waitress, they were originally known as "Angel and The Snakes," but changed to their more well-known name based on the constant cat-calls their lead singer received from construction workers and truckers while walking down the street. Following tours with David Bowie and Iggy Pop in the late 70's they hit big in both the US and UK with the songs "Atomic" and "Tide is High." FTP name this band, vehicle for the vocal talents of Debbie Harry and famous for songs like "Heart of Glass."

Answer: **Blondie**

19. It was finally ended by Attorney General Richard Olney and its leader was arrested on charges of conspiracy to interfere with the mail. Another charge against the entire leadership involved was that they had violated a federal injunction prohibiting them from communicating with their members. Federal troops under Grover Cleveland's direction and over the objections of Governor Altgeld arrested Eugene V. Debs and ended, FTP, what strike launched by the American Railway Union?

Answer: **Pullman** strike

20. This work begins with young James cutting out a magazine picture of a refrigerator, which he describes as "fringed with joy," but his day is ruined by the dour atheist Charles Tansley. In Part Three, we learn about the tenuous marriage of Paul Rayley and Minta Doyle, and the "solemn and sacred compact" that James and Cam have made against their uncompromising father, Mr. Ramsey, as they journey by sailboat towards the tile location. FTP, what is this highly internalized novel about an English family in the Hebrides, written by Virginia Woolf?

Answer: **To The Lighthouse**

21. Fought over three days, this battle saw one of the largest massacres of the first millennium. The chief of the Cherusci lured the Roman legions as well as camp followers, wagons, women and children deep into the wilderness, and then abandoned them in the rain, at which point, he joined his allies in slaughtering the Romans. FTP, name this 9AD battle which saw the legions of Varus defeated by Arminius.

Answer: **Teutoburg Forest** or **Teutoburgerwald**

22. His guidance of Hall and Oates to multi-platinum success in the 70s and 80s led to collaborations with John Mellencamp and Carly Simon. In 1987, he joined CBS Records and a year later he joined Sony Music. In 1990 he divorced his first wife, and three years later he married a songstress he discovered, whom he later divorced. FTP, name this former Sony Music CEO who was married to Mariah Carey.

Answer: Tommy **Mottola**

23. Developed independently in the fields of mathematics, quantum physics, electrical engineering, and seismic geology, these functions have led to advancements in image compression, turbulence, human vision, radar, and earthquake prediction. They are frequently preferred over traditional Fourier methods in situations where there are sharp spikes or discontinuities. FTP name these mathematical functions that cut up data into frequency components and then study each component with a resolution matched to scale.

Answer: **Wavelets**

24. The original edition had a preface that stated, "The United States themselves are essentially a great poem," was unsigned and contained twelve poems. Influenced by Shakespeare and Hebraic poetry, this book takes its title from fertility, universality, and cyclical life. FTP, name this collection of poems written from 1855 to 1892 by Walt Whitman.

Answer: Leaves of Grass

25. In the upper left corner the name of the work is written under a rainbow. In the middle, a cherub sits perched on a wheel under a scale while a ladder extends from behind the building in the upper right slightly into the foreground. The lower right is dominated by a seated, winged female figure staring off into space and seemingly absorbed by the writing in her lap. Containing among other things a sphere, a large polyhedron, and the first depiction of the magic square in art, FTP, what is this Albrecht Durer woodcut?

Answer: Melencolia I (the numeral is not needed because although Durer intended to produce more than one, only one was ever actually made)

26. Son of Anshar and Kishar, he discovered Tiamat's plot to kill her offspring, and managed to kill her consort Apsu. Moreover, he revealed Enlil's flood to Utnapishtim. FTP, name this patron of magic, wisdom, and medicine, father of Marduk, and Babylonian god of sweet waters, whose name lacks consonants.

Answer: Ea (ay-ah)

Berkeley Bonuses – written by Jerry Vinokurov, Brendan Shapiro, Devang Parekh, and Chris Nguyen

1) Answer some questions about a battle from the English Civil War FTPE.

1. Thomas Fairfax was drawn from his besieging of Oxford to meet King Charles's forces at this decisive June 14, 1645 battle. After the Royalists were defeated, the King fled up north like a bat to the Scots.

Answer: Naseby

2. Opposing Cromwell and Fairfax at Naseby for the Royalists were Charles himself and this commander, who had just sacked Leicester ["lester"].

Answer: Prince Rupert of the Rhine

3. Naseby was the first and most important battle for this army recently raised by Cromwell.

Answer: New Model Army

2) Answer the following about the deciphering of the genetic code, FTPE.

1) This is the term for the sequences of three consecutive nucleotides that encode for a specific amino acid, or for the beginning or end of protein synthesis.

Answer: codon

2) The first RNA codon to be deciphered was UUU in 1961 by this American biochemist, who shared the 1968 Nobel Prize in Physiology or Medicine with Robert William Holley and Har Gobind Khorana.

Answer: Marshall Nirenberg

3) UUU encodes for this amino acid, common in hemoglobin. Its side chain is essentially a molecule of toluene attached at the methyl group.

Answer: phenylalanine

3) Answer some questions about the history of 19th century Japan FTPE.

1. (10 points) Japan opened its doors to Western trade when this American commodore negotiated a treaty with them in 1854.

Answer: Commodore Matthew Perry

2. (10 points) The Meiji Restoration in Japan took place in 1867 and ended this period of Japanese history, which takes its name from Toyotomi Hideyoshi's successor.

Answer: Tokugawa Period (or Era or Shogunate)

3. (10 points) Among other things, this 1895 treaty which ended the Sino-Japanese war also required China to cede Taiwan, and ushered in the birth of an independent Taiwanese nation.

Answer: Treaty of Shimonoseki

4) FTPE, name these Steinbeck novels from characters.

1. Adam, Cal, Aron, and Cathy Trask

Answer: East of Eden

2. Danny, Pablo, Big Joe Portagee

Answer: Tortilla Flat

3. Ethan Allen Hawley, Alfio Marullo

Answer: The Winter of Our Discontent

5) Identify these things from Norse myth FTPE.

1. (10 points) The enormous wolf Fenris was bound by this magical chain, made from the sound of cat's paws, the roots of mountains, women's beards, and bird spittle.

Answer: Gleipnir

2. (10 points) Odin stuck this sword into a tree, from which it was drawn out by Sigmund, Sigurd's father. Repaired by Regin, it was Sigurd's sword, with which he slew Fafnir.

Answer: Gram

3. (10 points) This was the magical ship owned by Frey which could travel on land, sea, or air and could be folded up like a cloth and put into a pocket.

Answer: Skithblandidr (or Skinblandidr or Skidblandidr)

6) Identify these Caravaggio paintings FTPE.

[Moderator: accept anything equivalent-sounding, as these paintings don't have official titles.]

1. Depicting a scene from the end of Luke's gospel, this painting shows Christ breaking bread before two disciples who look on in amazement as they are finally allowed to recognize his divinity.

Answer: **Supper at Emmaus**

2. In this very busy painting, the title figure lies at the bottom covering his eyes while a horse and three other men jockey for position around and above him.

Answer: The **Conversion of St. Paul** or The **Conversion on the Road to Damascus**

3. This painting depicts Christ entering and pointing dramatically at the title figure, who is seated with his friends wearing a "Who, me?" look. The only source of light is from the upper right.

Answer: The **Calling of St. Matthew**

7) Answer some questions about relativity FTPE.

1. (10 points) This is the cornerstone of general relativity, which states that a uniformly accelerating reference frame is indistinguishable from an inertial reference frame in a gravitational field.

Answer: **principle of equivalence**

2. (10 points) One of the first successes of general relativity was the prediction of the advance of the perihelion of the orbit of this planet.

Answer: **Mercury**

3. (10 points) This effect arises from the energy loss that a photon suffers when it escapes a gravitational field.

Answer: **gravitational red shift** (prompt on red shift)

8) Given some lines from a poem, identify the poem FTPE:

1. "Sophocles long ago/Heard it on the Aegean, and it brought/Into his mind the turbid ebb and flow/Of human misery"

Answer: **Dover Beach** (Arnold)

2. "Nothing beside remains/ Round the decay/ Of that colossal wreck, boundless and bare/ The lone and level sands stretch far away."

Answer: **Ozymandias** (Shelley)

3. "Of Man's First Disobedience, and the Fruit Of that Forbidden Tree, whose mortal taste Brought Death into the World."

Answer: **Paradise Lost** (Milton)

9) Identify some aberrations from optics FTPE.

1. (10 points) This aberration results from the use of a particular type of mirror and corresponds to a dependence of focal length on aperture for nonparaxial rays.

Answer: **spherical** aberration

2. (10 points) This aberration occurs when an object is a long distance away from the optical axis and the rays strike the lens asymmetrically, resulting in primary and secondary images.

Answer: **astigmatism**

3. (10 points) This aberration results from the fact that the thin lens equation actually contains a dependence on wavelength, so that light with a mixture of different wavelengths becomes distorted.

Answer: **chromatic** aberration

10) Name the American author, given works FTPE

1. (10 points) *Music for Chameleons, The Grass Harp, Breakfast at Tiffany's*

Answer: Truman **Capote**

2. (10 points) *The Great Quillow, My Life and Hard Times, Fables for Our Time*

Answer: James **Thurber**

3. (10 points) *Ravelstein, Humbolt's Gift, Herzog*

Answer: Saul **Bellow**

11) Name the school of art, given members FTPE

1. (10 points) Robert Henri, George Luks, Edward Hopper

Answer: **Ashcan** School or The **Eight**

2. (10 points) Constant Troyon, Theodore Rosseau, Charles-Francois Daubigny

Answer: **Barbizon** School

3. (10 points) Albert Bierstadt, Asher Durand

Answer: Hudson River School

12) Given an African nation, name its capital city FTPE

1. (5 points) Chad

Answer: N'Jamena

2. (5 points) Equatorial Guinea

Answer: Malabo

3. (5 points) Lesotho

Answer: Maseru

4. (5 points) Mali

Answer: Bamako

5. (5 points) Mozambique

Answer: Maputo

6. (5 points) Rwanda

Answer: Kigali

13) Given his duties, identify the famous Nazi FTPE.

1. (10 points) A veteran of the Bier Hall Putsch, this man commanded the Gestapo as well as the Luftwaffe. He was convicted at Nuremberg and took poison hours before his scheduled execution.

Answer: Hermann Goering

2. (10 points) The only highly-placed Nazi to plead guilty at Nuremberg, he received a 20-year prison sentence, which he served at Spandau. He was Hitler's Armaments Minister and was known as the "Architect of the Reich."

Answer: Albert Speer

3. (10 points) A close personal friend of Hitler, this man helped him write *Mein Kampf* and became head of the party's Central Political Committee and Hitler's deputy. He was sentenced to life at Spandau and allegedly hanged himself in prison in 1987.

Answer: Rudolf Hess

14) Given the Supreme Court case (or cases), identify the Amendment to the Constitution which was the primary subject of the case, FTPE.

1. (10 points) *Schenk v. US* and *Abrams v. U.S.*

Answer: 1st Amendment

2. (10 points) *Griswold v. Connecticut* and *Brown v. Topeka Board of Education*

Answer: 14th Amendment

3. (10 points) *Mapp v. Ohio*

Answer: 4th Amendment (the 14th Amendment was not the primary subject but the secondary one of the case)

15) Identify these things from electrochemistry FTPE.

1. (10 points) This is the term for a cell that harnesses electron flow in a redox reaction to do useful work.

Answer: galvanic cell

2. (10 points) This is the inverse of a galvanic cell; it consumes energy from an outside source to drive a non-spontaneous redox reaction.

Answer: electrolytic cell

3. (10 points) This is the central equation of electrochemistry. It relates the potential to the log of the ratio of concentrations of the electrolytes.

Answer: Nernst equation

16) Identify the psychologist from works FTPE

1. (10 points) *Identity and the Life Cycle*, *Childhood and Society*, *Young Man Luther*

Answer: Erik Homburger Erikson

2. (10 points) *Motivation and Personality*, *Toward a Psychology of Being*

Answer: Abraham Harold Maslow

3. (10 points) *Child's Conception of the World*, *Moral Judgement of the Child*, *The Psychology of the Child*

Answer: Jean Piaget

17) Given an album released in 2002, name the band or artist who recorded it FTPE, 5 if you need a track off the album.

1. (10 points) *Songs for the Deaf*

(5 points) *No One Knows*

Ans: Queens of the Stone Age

2. (10 points) *Yankee Hotel Foxtrot*

(5 points) *I Am Trying to Break Your Heart*

Ans: Wilco

3. (10 points) *C'mon C'mon*

(5 points) *Soak Up the Sun*

Ans: Sheryl Crow

18) 30-20-10 Name the poet, given lines from their work

1. (30 points) "My mother bore me in the southern wild,/and I am black, but O! my soul is white/White as an angel is the English child:/But I am black as if bereav'd of light"

2. (20 points) "Mock on, mock on, Voltaire, Rousseau;/Mock on, mock on, 'Tis all in vain./You throw the sand against the wind,/And the wind blows it back again."

3. (10 points): "In what distant deeps or skies,/Burnt the fire of thine eyes?/On what wings did he aspire?/What the hand dare seize the fire?"

Ans: William Blake

[The 30 is from "The Little Black Boy"; the 10 is from "The Tyger."]

19) Given information about a person associated with Ludwig Wittgenstein, name that person FTPE

1. (10 points) Along with Russell, he served as an examiner for Wittgenstein's doctoral qualification, although he was more famous for his *Refutation of Idealism*, and influence on other members of the Bloomsbury group. He edited the periodical *Mind*.

Ans: G[eorge] E[dward] Moore

2. (10 points) When his father died, Wittgenstein gave away his entire inheritance to a number of famous Austrian artists, including this man, famous for his *Letters to a Young Poet* and *Duino Elegies*.

Ans: Ranier Maria Rilke

3. (10 points) During Wittgenstein's childhood, his home was frequented by many of Vienna's cultural elite, including this composer of *The Academic Festival Overture* and *German Rhapsodies*.

Ans: Johannes Brahms

20) FTPE: Characters from Lord of the Rings.

1. (10 points) This Brandybuck is one of the four hobbits in the Fellowship.

Answer: Meriadoc or Merry Brandybuck

2. (10 points) Also known as Fangorn, he roused the Ents against Saruman.

Answer: Treebeard

3. (10 points) This elf appears for only three seconds in the council scene of the movie, but now has a loyal fan following on the web.

Answer: Figwit

21) Given the names of different Simpsons characters, give the voice actor who plays them FTPE.

1. (10 points) Krusty the Clown, Groundskeeper Willie, Mayor Quimby

Ans: Dan Castellaneta

2. (10 points) Mr. Burns, Kent Brockman, Smithers, Ned Flanders

Ans: Harry Shearer

3. (10 points) Apu Nahasapeemapetilon, Carl Carlsen, Chief Wiggum

Ans: Hank Azaria

22) FTPE Spy Planes

1. (10 points) Nicknamed the blackbird, this plane holds numerous air speed records.

Answer: SR-71 (accept SR-71A, SR-71B as well)

2. (10 points) Created in the mid 1950s by the CIA as a high-altitude single-engine reconnaissance aircraft. It is best known for being shot down in 1960.

Answer: U-2

3. (10 points) Designed as a high-altitude Mach 3 interceptor for defense against supersonic bombers. This aircraft was a precursor to the SR-71.

Answer: YF-12 (accept YF-12A)

23) 30-20-10 Mythological beings.

1. (30 points) Fable says they were ruled by a race of kings named Suleyman.

2. (20 points) They are separated into five classes: Marid, Afreet, Sheitan, Ghillan, and Jann.

3. (10 points) They are the demons of Muslim legend and were thought to have been created 2000 years before Adam.

Answer: Jinn