

2013 Fall Kickoff Tournament – Round 11 (Finals Packet 1)

1. During this man's tenure as Secretary of War under James Monroe he called for the censure and trial of Andrew Jackson due to his capture of Spanish Florida. Due to this man's longevity and ability as a Senator, he was identified as a member of the "Great Triumvirate" of Congressional leaders along with Henry Clay and Daniel Webster. In his essay "South Carolina Exposition and Protest," he outlined the doctrine of nullification and approved of its usage by states. For 10 points, name this long time Senator from South Carolina who resigned the Vice Presidency due to his disagreement with President Jackson over the "Tariff of Abominations."

ANSWER: John C. **Calhoun**

BONUS: This part of the brain connects the left and right hemispheres. For 10 points each:

[10] Name this wide, flat bundle of neural fibers beneath the cortex.

ANSWER: **corpus callosum**

[10] The corpus callosum is a type of this tissue. These tissues transmit signals between regions of the cerebrum and are clinically evaluated with Diffusion Tensor Imaging.

ANSWER: **white matter** [prompt on "nervous tissue," "nerve tissue," or "brain tissue"]

[10] White matter is characterized by this lipid dielectric which insulates the axons. Schwann cells supply the peripheral neurons with these structures and gaps between them along the axon are called nodes of Ranvier.

ANSWER: **myelin** sheaths

2. In this play, the main character's son, Lyons, is a musician who shows up on his payday to ask for money. At the end of this play, a character who believes himself to be the Archangel Gabriel attempts to blow his trumpet but cannot produce a sound. Earlier, the baby girl Raynell is adopted by the main character's wife after Alberta dies in childbirth. That main character refuses to allow his son Cory to play football because he had experienced racial discrimination as a baseball player. For 10 points, identify this play about the garbage man Troy Maxson and his wife Rose, the sixth part of August Wilson's *Pittsburgh Cycle*.

ANSWER: **Fences**

BONUS: Name some important Secretaries of State for 10 points each.

[10] This New York Senator was the frontrunner for the Republican Presidential nomination in 1860 but was beaten out by Lincoln. He served as Secretary of State instead and had a notable "folly" with his purchase of Alaska.

ANSWER: William **Seward**

[10] The first former First Lady to serve in the Cabinet, this Secretary of State was appointed in 2009 as Barack Obama's first Secretary of State. She took responsibility for the attack on the U.S. Embassy in Benghazi, Libya.

ANSWER: Hillary **Clinton**

[10] This Secretary of State forgot about the order of the succession to the Presidency when he claimed that he was "in control here, in the White House," after the assassination attempt on President Ronald Reagan.

ANSWER: Alexander **Haig**

3. The highest peak of the eastern portion of this mountain range is Piz Bernina, which is one of the many mountains over four thousand meters in this range. The tallest mountain in this range was first ascended in 1786 and two plane crashes have occurred on it. This mountain range stretches over twelve hundred kilometers in a crescent shape over eight countries. The highest mountain in this range has been an issue for two of the countries that share it, France and Italy. For 10 points, name this mountain range of Europe that contains peaks like Mont Blanc and the Matterhorn.

ANSWER: The **Alps**

BONUS: At the top right of this work, mountains pierce the cloudy sky and a family of peasants build a fire in the middle ground of this work. For 10 points each:

[10] Name this painting that shows the title group, one of which has a fox, while the rest of the group climb over a hill leading a pack of dogs.

ANSWER: *The **Hunters in the Snow*** [or *The **Return of the Hunters***]

[10] *The Hunters in the Snow* is by this Flemish Renaissance artist who also painted *Landscape with the Fall of Icarus*

ANSWER: Pieter **Bruegel** the Elder

[10] Two men use an unhinged door as a serving tray in the foreground of this Bruegel painting that depicts dozens of people enjoying the title nuptials.

ANSWER: **Peasant Wedding**

4. The particle density divided by the Riemann zeta function all raised to the two-thirds power is proportional to the transition temperature of these systems. The nonlinear equation modeling their behavior has the form of the Schrödinger equation with the addition of an interaction term and is known as the Gross-Pitaevskii equation. A type of this substance in which the particles are confined to one dimension is named after Tonks and Girardeau, and this supercooled state of matter was first synthesized by Cornell and Wieman in rubidium atoms. For 10 points, identify this doubly-eponymous “fifth state of matter.”

ANSWER: **Bose-Einstein Condensates** [or **BECs**]

BONUS: Name some novelists with something in common, for 10 points each.

[10] This man included his novels *Nana* and *Germinal* in his *Rougon-Macquart* series, but he is perhaps better known for his letter in the *L'Aurore* newspaper attacking the anti-semitism and bias involved in the Dreyfus Affair entitled “J'accuse.”

ANSWER: Emile **Zola**

[10] This other author of *Strait Is the Gate* wrote about Michel, who becomes the title person after a bout with Tuberculosis in Tunis in *The Immoralist* in addition to writing a novel about Bernard and his friend and lover Olivier, *The Counterfeiters*.

ANSWER: Andre **Gide**

[10] Both Emile Zola and Andre Gide were writers from this European country, also home to authors like Georges Perec, Honore de Balzac and Voltaire.

ANSWER: **France**

5. The narrators of this poem describe themselves as “people on the pavement,” and in the final stanza they note how “on we worked, and waited for the light / and went without the meat, and cursed the bread.” This poem’s title character is described as “quietly arrayed” and someone who “fluttered pulses when he said ‘Good-morning’.” That man was “imperially slim” and “admirably schooled in every grace,” but on “one calm summer night” he “went home and put a bullet through his head.” For 10 points, name this poem, about a “gentleman from sole to crown,” written by Edwin Arlington Robinson.

ANSWER: “**Richard Cory**”

BONUS: Answer these questions about the French Revolution for 10 points each.

[10] What husband of Marie Antoinette served as King of France at the beginning of the French Revolution before he was deposed by revolutionaries?

ANSWER: King **Louis XVI** [prompt on “Louis”]

[10] After being deposed by revolutionaries, Louis was moved from his Palace at Versailles to what other palace located on the banks of the Seine River?

ANSWER: **Tuileries** Palace

[10] This revolutionary published articles advocating for the revolution in his newspaper “The Friend of the People” before he himself was killed in his bathtub by Charlotte Corday.

ANSWER: Jean-Paul **Marat**

6. This man pursued one of his warriors for sixteen years after he ran off with his fiance, Grainne, during his wedding. That warrior, Diarmuid, is later refused help by this man who could have saved his life by allowing him to drink water with healing properties from his hands. After losing control of his people, this mythic figure stabbed himself in the forehead with a spear in order to stay awake and maintain order. While working for the Druidic poet, Finnegas, this man burned his thumb as he was cooking the Salmon of Knowledge, which enabled him to see the solution to any problem confronting him.. For 10 points, name this Celtic hero who is the central figure of the Fenian cycle.

ANSWER: **Fionn macCumhaill** (pronounced Finn MacCool) [accept either underlined portion; accept **Deimne**; **Fingal**]

BONUS: This theorem relates the lengths of the legs of a right triangle to the length of its hypotenuse. For 10 points each:

[10] Name this theorem commonly stated as a squared plus b squared equals c squared.

ANSWER: **Pythagorean** Theorem [or **Pythagoras'** Theorem]

[10] When using only integers, the Pythagorean Theorem is the highest possible case allowed by this theorem that was proven by Andrew Wiles in 1994.

ANSWER: **Fermat's Last** Theorem [or **Fermat's Great** Theorem; prompt on “Fermat’s Theorem”; do not accept “Fermat’s Little Theorem”]

[10] This statement says that the sum of the lengths of any two sides must be greater than the length of the third side. It can be generalized as the Cauchy-Schwarz inequality.

ANSWER: **triangle inequality**

7. This man introduced the “totemic operator”, which was meant to demonstrate the pathway between one member of a pair of binary opposites to another, and he discussed “macaws and their nest” in a chapter entitled “Bororo Song.” This author of *The Jealous Potter* and *The Way of the Masks* discussed irreducible units known as “mythemes” in another work. He told of his travels to Brazil in his memoir *Tristes Tropiques* and included “The Raw and the Cooked” in *Mythologiques*. For 10 points, identify this author of *The Savage Mind* and *The Elementary Structures of Kinship*, a French structuralist anthropologist.

ANSWER: Claude **Levi-Strauss**

BONUS: For 10 points each, answer these questions about a modern American composer.

[10] This late twentieth century composer has composed scores of works, but is perhaps most well known for operas such as *Einstein on the Beach* and *Satyagraha*.

ANSWER: Philip **Glass**

[10] Much of Glass’s early works are said to be in this “experimental” style, characterized by steady pulse, constant harmonies, and the repetition of musical phrases.

ANSWER: **Minimalism** [accept word forms]

[10] Glass’s *Einstein on the Beach*, *Satyagraha*, and *Akhenaten* are collectively known by this name.

ANSWER: **Portrait Trilogy**

8. This event was resolved in Lombardy when General Joseph Radetzky won the Battle of Novara following the Five Days of Milan. At the Battle of Timisoara, a newly created Hungarian republic led by Lajos Kossuth was crushed by the Austrians with Russian assistance. Earlier, the Hungarian Diet had passed a series of April Laws and pushed for greater independence until Franz Joseph annulled those laws. In France, this event led to the creation of the Second Republic and the deposition of the Citizen King Louis Philippe. For 10 points, name this series of events during which popular uprisings struck most of Europe during the mid-nineteenth century.

ANSWER: **Revolutions of 1848** [prompt on “revolutions” or equivalents]

BONUS: For 10 points each, name these European mountain peaks.

[10] This inactive volcano located in the Caucasus is the highest peak in Europe.

ANSWER: Mount **Elbrus**

[10] This tallest mountain in the United Kingdom is 4,409 feet tall and is located in the Grampian Mountains.

ANSWER: **Ben Nevis**

[10] Located on the border of Thessaly and Macedonia, this peak is the highest in Greece.

ANSWER: Mount **Olympus**

9. One problem associated with this technique is known as tailing but can be avoided by increasing the polarity of the solvent. This technique can be performed through a stationary phase of charged particles in the ion exchange type in addition to the capillary gas and thin layer types. In general, this technique uses two phases, one of which is stationary and the other moving, in order to separate components of a mixture. For 10 points, name this method for separating solutes into mobile and stationary phases whose name comes from the Greek translation of “color writing”.

ANSWER: **Chromatography**

BONUS: Answer the following about Heian period literature, for 10 points each.

[10] Sometimes called the world's first novel, this work by Murasaki Shikibu follows the son of an emperor whose first wife is Princess Aoi. A blank chapter titled “Vanished Into the Clouds” implies the title character's death.

ANSWER: *The **Tale of Genji*** [or **Genji Monogatari**]

[10] *The Tale of Genji* takes place in this country. During the Heian period, this country's capital was located in modern-day Kyōto.

ANSWER: **Japan** [accept **Nippon**-koku or **Nihon**-koku]

[10] Another book produced during the Heian period is this collection of observational notes, personal thoughts, and poetry, written by Sei Shōnagon.

ANSWER: *The **Pillow Book*** [or **Makura no Sōshi**]

10. This team began its comeback from a long series of bad seasons in 1989 when it traded Joe Carter to the San Diego Padres for two unproven players against popular opinion. In 1991, the team's general manager John Hart traded Eddie Taubensee to the Houston Astros for an outfielder and hired Mike Hargrove to manage. Those players, Sandy Alomar Jr, Carlos Baerga, and Kenny Lofton helped form the nucleus of the team that was able to win the American League pennant in 1995. For 10 points, name this baseball team, now managed by Terry Francona and having stars like Asdrubal Cabrera, Carlos Santana, and Jason Kipnis in its starting lineup.

ANSWER: **Cleveland Indians** [accept either underlined portion]

BONUS: Answer some questions about a hero of Germanic legend, for 10 points each:

[10] This hero is the son of Sieglinde and Siegmund and is invincible except for a leaf-shaped mark on his back.

ANSWER: **Siegfried** [also accept **Sigurd** or **Sigurthr**]

[10] Siegfried appears in this German epic, in which he slays a dragon, and is killed by Hagen.

ANSWER: **Nibelungenlied** [or **Song of the Nibelungs**]

[10] This is the dragon Siegfried slays. The blood of this dragon pours over Siegfried, causing him to become invincible except for the one leaf-shaped spot.

ANSWER: **Fafnir**

HALFTIME – Announce the score and allow teams to substitute

11. This author wrote of a language which lacks nouns, with sentences such as “The moon rose above the water” being translated as “Upward behind the onstreaming it mooned,” in *Tlön, Uqbar, Orbis Tertius*. In another story, he wrote of a wizard who creates a young man with his dreams. This author of *The Circular Ruins* wrote of an almost infinite series of hexagonal rooms containing books of all possible information. For 10 points, name this author who wrote of a point that contains the universe in *El Aleph*, in addition to including stories such as *The Garden of Forking Paths* and *The Library of Babel* in his collection *Ficciones*.

ANSWER: Jorge Luis **Borges**

BONUS: For 10 points each, name these high ranking Nazi officials.

[10] This former World War I fighter pilot led the Luftwaffe throughout all of World War II.

ANSWER: Hermann Wilhelm **Goring** [or Hermann Wilhelm **Goering**]

[10] This Deputy Fuhrer was captured during a peace negotiation trip to the UK and ultimately charged with life imprisonment at Spandau Prison.

ANSWER: Rudolf Walter Richard **Hess**

[10] This head of the German Navy became leader of the Third Reich following Hitler’s suicide and ordered the German surrender that ended World War II in Europe.

ANSWER: Karl **Donitz** [or Karl **Doenitz**]

12. This composition first gained fame in the United States when it was premiered in 1929 by the New York Philharmonic under the direction of Arturo Toscanini. This composition is written in C major and is known for a continuous crescendo from pianissimo to fortissimo throughout the piece. The main melody in this piece is passed first from the flutes to the clarinets, and then notably to the bassoon. Based upon a Spanish dance, this piece in three-four time is famous for a snare drum ostinato that plays throughout. For 10 points, identify this orchestral piece commissioned as a ballet by Ida Rubinstein, the most famous composition of Maurice Ravel.

ANSWER: **Bolero**

BONUS: This show has become the most pirated show of all time according to TorrentFreak. For 10 points each:

[10] Name this show which follows the Seven Houses of Westeros as they fight over the Iron Throne and control over the realm. Much of the show is shot in Northern Ireland and Malta.

ANSWER: **Game of Thrones**

[10] This actor received top billing for the show’s first season, playing the important character Ned Stark. He also played Boromir in *The Lord of the Rings* movies.

ANSWER: Sean **Bean**

[10] This character is played by Ian Glen in the show. He fled Westeros to avoid justice for selling poachers into slavery, and he now swore to serve Daenerys Targaryen. His father is also the Lord Commander of the Night’s Watch.

ANSWER: Ser **Jorah Mormont** [accept either underlined portion]

13. This empire's first ruler defeated the Kaniaga dynasty at the Battle of Kirina and established this empire. That man was named Sundiata Keita, and all of the resulting rulers of this empire were descended from him. One of this empire's greatest cities was Timbuktu, a great center of trade where many libraries and Islamic universities were built. This empire's most famous ruler brought with him sixty thousand people and two hundred camels laden with gold on his hajj. For 10 points, name this empire, whose ruler Mansa Musa depreciated the value of gold in Cairo during his pilgrimage to Mecca.

ANSWER: **Mali** Empire

BONUS: For 10 points each, answer the following questions about one of Einstein's famous theories.

[10] This theory regarding gravitational forces posits that an accelerating reference frame is equivalent to a reference frame in a certain type of field.

ANSWER: **general relativity** [prompt on "relativity"]

[10] This experiment gave a value for gravitational redshift that was close to values predicted by Einstein's theory of general relativity. Identify this experiment performed by two scientists in the Jefferson Laboratory of Harvard.

ANSWER: **Pound-Rebka** Experiment

[10] This effect in which light is bent by gravity was predicted by Einstein's theory of general relativity.

ANSWER: **gravitational lensing** [prompt on "lensing"]

14. In this religion, the end times will see the appearance of a savior called Saoshyant. This religion's followers believe that the wicked are taken to the House of Lies by Vizaresh after failing to cross the Chinvat Bridge upon death. Some followers of this religion place their dead in Dakhmas, or Towers of Silence. A now-extinct sect of this religion worshipped Zurvan, the parent of Ahura Mazda and Ahriman, or Angra Mainyu. This religion's sacred texts include the Yasna, Vendidad, and Yashts, which collectively belong to the *Avesta*. For 10 points, name this Persian religion founded by a namesake prophet.

ANSWER: **Zoroastrianism** [accept **Mazdaism** or **Magianism**]

BONUS: The speaker of one poem in this collection tells the title figure "you eat your victuals fast enough." For 10 points each:

[10] Name this 1896 poetry collection which includes the poem "Terence, this is stupid stuff."

ANSWER: A **Shropshire Lad**

[10] In this other poem from *A Shropshire Lad*, the speaker advises to "give crowns and pounds and guineas / But not your heart away."

ANSWER: "**When I was one-and-twenty**"

[10] *A Shropshire Lad* was written by this English author whose other poems include "To an Athlete Dying Young."

ANSWER: Alfred Edward **Housman**

15. One of the frescos contained in this building is Perugino's *Delivery of the Keys*, and another work shows the Red Sea with red water. The left wall of this building is lined with different frescoes depicting the life of Moses, while the right wall has pictures depicting the life of Christ. One of the paintings shows St. Bartholomew holding his flayed skin. The artist who painted that also painted *The Last Judgment* on the back wall after he completed the massive ceiling painting. For 10 points, name this building, where Michelangelo painted *The Creation of Adam* and where papal conclaves are held in Vatican City.

ANSWER: **Sistine Chapel**

BONUS: Answer the following questions about a notable Greek philosopher, for 10 points each.

[10] This philosopher compared himself to a "gadfly," and his namesake method involves the asking of many questions in order to stimulate critical thinking.

ANSWER: **Socrates**

[10] Socrates' break from conventional thinking and his constant questioning of Athenian Democracy garnered him a trial on the basis of two charges. Name one of the charges.

ANSWER: **corrupting the youth** or **impiety** [do not accept "atheism" in place of impiety]

[10] Socrates' trial was brought forth by a formal accusation from this man who had been unknown to Socrates prior to the trial.

ANSWER: **Meletus**

16. The powder type of this phenomenon is a technique used to analyze crystalline solids. Application of this effect to crystal lattices and X-rays was pioneered by the father-son team of Bragg. In microscopes and telescopes, this phenomenon prevents angular resolution beyond a certain point. Types of this phenomenon are named for Fraunhofer and Fresnel. Interference patterns that occur due to this phenomenon resulted from Young's double slit experiment. A namesake grating can be used to separate light of different wavelengths. For 10 points, name this effect in which light bends around an object.

ANSWER: **diffraction** [prompt on **interference**]

BONUS: For 10 points each, name these Greek sculptors with similar names:

[10] Originally of Argos, he sculpted the *Spear-Bearer* and was known for his namesake canon of proportions in art.

ANSWER: **Polykleitos**

[10] One of the most famous Attic sculptors of the 4th century BC, this man sculpted *Apollo with the Infant Dionysus*.

ANSWER: **Praxiteles**

[10] This sculptor was accused of depicting himself and Pericles on the inside of the Parthenon and the shield of the statue of Athena within.

ANSWER: **Phidias**

17. One chapter in this novel begins with a man's troops salivating over imaginary crisp sour plums, and one character in this novel is the most feared warrior in all the land and rides a horse known as Red Hare. Another character, Huang Gai, sets fire to a fleet of ships with arrows that are on fire at the Battle of the Red Cliffs. It begins with the Oath of the Peach Garden, in which three warriors swear their loyalty to each other during the Yellow Turban Rebellion. Those characters, Liu Bei, Guan Yu, and Zhang Fei, appear in what classic Chinese novel, centering on the tumultuous, title time period?

ANSWER: *Romance of the Three Kingdoms*

BONUS: "Great God! This is an awful place." For 10 points each:

[10] Those words appear in a January 17, 1912 journal entry written by this English explorer, who died of exposure and starvation two months later.

ANSWER: Robert Falcon Scott

[10] The "awful place" Scott was referring to was this continent, where the bodies of Scott and the other four members of his expedition were recovered in November 1912.

ANSWER: Antarctica

[10] The goal of Scott's expedition was to be the first men to reach the South Pole. When they arrived, however, they were devastated to learn that a crew led by this Norwegian had beaten them to it by four weeks.

ANSWER: Roald Amundsen

18. When immersed in potassium dichromate and silver nitrate, these cells turn black in Golgi staining. The synthesis of proteins in these cells takes place in Nissl (NISS-uhl) bodies. Coming in two varieties, these cells can come in pyramidal and multipolar varieties. Parts of these entities include the Nodes of Ranvier, the soma, and these also possess dendrites and axons. For ten points, name these specialized cells that connect to each other to form networks in the body's central and peripheral nervous systems.

ANSWER: Neurons [prompt on "nerve cells"]

BONUS: It occurs when people are actively seeking work but do not find it. For 10 points each:

[10] Name this concept, the cyclical form of which occurs when there is not enough aggregate demand to provide jobs for everyone seeking work.

ANSWER: unemployment

[10] This type of unemployment can be voluntary and occurs during the time period when a person is moving from one job to another.

ANSWER: frictional unemployment [accept search unemployment]

[10] This curve represents the inverse relationship between unemployment and inflation. Its original form is considered to be too simplistic by modern economists.

ANSWER: Phillips curve

19. Later in this man's life, he simplified his already simple style by switching from painting to cut paper collages, such as *The Snail*. In one work by this man, two wine decanters and several pieces of fruit sit on a table, while the walls and tablecloths are covered by blue flowers and vines. This painter of *The Piano Lesson* painted his wife with the title feature on her nose in *The Green Line*. This artist painted two works of the same name that depict five nude people holding hands in a circle. *The Blue Nude*, *The Joy of Life*, and *The Dance* are by, for 10 points, what founder of Fauvism?

ANSWER: Henri-Emile-Benoit Matisse

BONUS: Name these features related to glaciers for 10 points each.

[10] These features are accumulations of unconsolidated glacial debris which are plucked off a valley floor or fall off valley walls. They come in terminal, lateral, and ground varieties.

ANSWER: Moraines

[10] These are large cracks in the surface of glaciers which form as a result of shear stress when different layers of a glacier move at different speeds.

ANSWER: Crevasses

[10] These are elongated hills formed by glacial ice acting on unconsolidated till or ground moraine, recording the final direction of glacial movement.

ANSWER: Drumlins

20. The Meiji Restoration was an important diplomatic crisis during this era. At the Battle of Hakodate, the Republic of Ezo was crushed, and the Boshin War came to a conclusion establishing the beginning of this era. Its goals were delineated in the Charter Oath, which expressed the desire to break away from the "evil customs of the past." An important rebellion during this era was the Satsuma Rebellion, and this event occurred largely due to the arrival of Commodore Matthew Perry. For 10 points, name this restoration that ended the Tokugawa Shogunate and ushered in an era of economic modernization.

ANSWER: Meiji Restoration [or Meiji Era]

BONUS: The title object of this poem sits "beside the white chickens." For 10 points each:

[10] Name this poem in which "so much depends upon" the title object, which is "glazed with rain water".

ANSWER: "The Red Wheelbarrow"

[10] This imagist poet penned "The Red Wheelbarrow", which was included in his work *Spring and All*. He also wrote *Pictures from Brueghel*.

ANSWER: William Carlos Williams

[10] Another poem by Williams is "This Is Just To Say", in which he apologizes for having eaten these objects "which you were probably saving for breakfast" and states that "they were delicious/so sweet/and so cold".

ANSWER: plums

END OF MATCH – Announce final score and do not read tiebreaker tossup(s) unless the score is tied

Tiebreaker Tossups – If the match is tied, read one tossup at a time until the score changes (correct answer or neg).

21. In graph theory, this man names a closed path which traces each edge precisely once. He lends his name to a set of polynomials related by Bernoulli numbers. A topographical formula named for this man states that faces minus edges plus vertices equals his namesake characteristic, two for any polyhedron. This mathematician proved that the Seven Bridge of Königsberg problem had no solution. For 10 points, name this Swiss mathematician who lends his name to the base of the natural logarithm, e .

ANSWER: Leonhard **Euler**

22. One of this man's paintings shows a white robed man kneeling behind a knight. This artist's version of *The Last Judgement* portrays the Archangel Michael standing on a skeletal bat covering the roof of Hell. Peacocks can be found in the background of his *Virgin of Chancellor Rolin*, and he often inscribed his motto "Als icy Chan" in his works. This artist painted a self-portrait with a red turban and collaborated with his brother on the *Ghent Altarpiece*. He also painted a mirror reflecting a couple holding hands during the title ceremony. For 10 points, name this fifteenth century Flemish painter of *The Arnolfini Wedding*.

ANSWER: Jan **van Eyck**