Tournament 42
Round 3
Tossups

1. The Soviet Union's Buran was a response to this program, which was investigated by the Rogers Commission. The cancelled Ares would have used technology originally developed for this program, and its Remote Manipulator System was Canada's principal contribution. One disaster involving this program occurred when an O-ring fractured due to cold, and another resulted when foam (*) insulation damaged the orbiter's thermal tiles. For 10 points, identify this program whose efforts included Challenger and Columbia, which was cancelled by NASA in 2012.
ANSWER: Space Shuttle program [or $\underline{\text { Space Transportation } \underline{\text { S }} \text { ystem; accept the name of any particular }}$ shuttle at any point; prompt on NASA]

234-14-86-03101
2. This piece has the same opus number as a piece whose third movement, "Allegro molto e vivace," features the hands playing triplets in opposition to each other. This piece's third movement makes generous use of sforzando notes and is marked "Presto agitato." It begins with triplets in the right hand being matched by octaves in the left hand. It was nicknamed by Ludwig Rellstab, who related this work, marked (*) "Quasi una fantasia," to a beautiful scene upon Lake Lucerne. For 10 points, name this piano sonata by Ludwig van Beethoven whose nickname suggests nocturnal illumination.
ANSWER: Moonlight Sonata [or Piano Sonata No. 14 in C-sharp minor, Op. 27, No. 2; or Beethoven's Op. 27, No. 2; prompt on Beethoven's Op. 27]
3. This character is pursued by Reverend Eccles after running from the graveyard during the funeral of his daughter, Rebecca June, who was accidentally drowned by his drunken wife in the bathtub. At the end of his first appearance, he discovers his mistress Ruth is pregnant and abandons her. A former high school basketball star in Brewer, Pennsylvania, he is first seen selling the (*) MagiPeeler. This character appears in novels whose titles say he "Is Rich" and "at Rest." For 10 points, name this John Updike character who appears in four novels.
ANSWER: Rabbit [or Harry Angstrom; or Harry Angstrom]
4. Saponification is hydrolysis of lipids by these compounds. The molar concentration of the conjugate type of one of these compounds is found in the numerator of the log term in the Henderson-Hasselbalch equation. The presence of these compounds will turn phenolphthalein pink, and Lewis defined these compounds as electron-pair donors. In Bronsted-Lowry theory, they accept protons. Some types of these compounds produce (*) hydroxide ions in aqueous solutions. For 10 points, name this class of compounds that have a pH greater than seven and form salts with acids. ANSWER: base
5. This book remarks that a man only becomes a citizen when he develops genuine concern for the welfare of all. This work suggests population growth as the most sure sign of a good government, and delineates the concept of the (*) "general will." This book defines the "sovereign" as being composed of the entire population, and begins "Man is born free but everywhere he is in chains." For 10 points, name this treatise by Jean-Jacques Rousseau, whose title refers to an agreement between the state and its people. ANSWER: Of The Social Contract, Or Principles of Political Right [or Du contrat social ou Principes du droit politique]
6. During this battle, fifty soldiers defended a strategically located grain elevator against ten separate enemy offensives. The defenders in this battle launched a counter-attack called Operation Uranus. The site of this battle was the last major barrier between the $(*)$ German army and major Soviet oil fields. In terms of casualties, it is the largest non-siege battle in human history. For 10 points, name this decisive Soviet victory of World War II, the turning point of the Eastern Front, which took place at a city named for the Soviet leader.

ANSWER: Battle of Stalingrad [do not accept "Volgograd"]
7. This artist wrote a short poem ending 'Hope, Hope, fallacious Hope! Where is thy market now?'" which he paired with a sunlit painting showing the throwing overboard of "the dead and the dying" in the face of a coming typhoon. Similar to this artist's $\left(^{*}\right)$ Slave Ship is a painting of a ship from the Battle of Trafalgar being tugged away to broken up for scrap. His best known work is a barely recognizable oil painting depicting the Great Western Railway. For 10 points, name this British painter of The Fighting Temeraire and Rain, Steam, and Speed.
ANSWER: Joseph Mallord William Turner
8. One kingdom in this modern-day country was founded in a region once occupied by the Cantabri and the Asturs. This country was separated from Septimania by the 'march," which now remains in the form of a tiny principality co-ruled by this country. Much of this country was once divided into petty kingdoms called taifas. Former kingdoms in this country include (*) Navarre and Leon. For 10 points, Aragon and Castile eventually formed what country on the Iberian Peninsula? ANSWER: Kingdom of Spain [or Reino de España]
9. The creation of one of these systems among young children was observed in a study by Goldin-Meadow and Feldman. One of these systems was brought to America by Laurent Clerc; that version had earlier been developed by Charles-Michel de l'Epee. Another of these systems was created because of a hereditary recessive gene found on (*) Martha's Vineyard. Serious linguistic study of these languages followed after the efforts of William Stokoe of Gallaudet University. For 10 points, name this type of language that can be used in place of spoken language by deaf people.
ANSWER: sign languages
10. In one of this author's plays, the Danaids travel to Argos to seek the aid of King Pelasgus, while in another, a messenger tells Atossa about the loss at Salamis. This author of The Suppliants and The Persians described Io's visit to a chained-up titan in another of his plays. This man wrote a (*) trilogy about the house of Atreus in which the Furies decide not to prosecute a man for murdering his mother Clytemnestra. That trilogy of his concludes with The Eumenides. For 10 points, name this Greek tragedian who wrote Prometheus Bound and the Oresteia.
ANSWER: Aeschylus
11. This king employed the admiral Comte de Grasse, who lost to the British off the coast of Dominica a year after winning the Battle of the Chesapeake. The physiocrat Jacques Turgot was replaced as this king's Finance Minister by Jacques Necker. The Battle of (*) Saratoga took place during his reign, causing him to support the American Revolution. For 10 points, identify this king, the husband of Marie Antoinette who was guillotined during the French Revolution.
ANSWER: Louis XVI [prompt on Louis]
233-14-86-03111
12. Elevated levels of 5-HIAA, the main metabolite of this compound, are used to test for carcinoid tumors of enterochromaffin cells in the small intestine. Fluoxetine works by inhibiting the reuptake of this neurotransmitter, which is released in the raphe nuclei. This neurotransmitter, which is also known as $5-\mathrm{HT}$, is mimicked in structure by LSD and ecstasy, and is derived from tryptophan. Prozac selectively $\left(^{*}\right)$ inhibits the reuptake of this compound. For 10 points, name this neurotransmitter involved in mood modulation, low levels of which can lead to depression.
ANSWER: serotonin [or 5-hydroxytryptamine; or 5-HT until it is read]
189-14-86-03112
13. Near the conclusion of this novel, a dog gives away a criminal hideout on James Island. A character in this novel asks, "I am an Englishman, where are my rights?" after being caught stealing a snuffbox. That character was trained as a pickpocket by Fagin, who had earlier been introduced to the protagonist through Jack (*) Dawkins, also known as The Artful Dodger. The title character leaves the watch of Mr. and Mrs. Bumble after asking for more porridge. For 10 points, name this novel by Charles Dickens about a thieving orphan.
ANSWER: Oliver Twist
230-14-86-03113
14. When its masses are equal, this quantity is zero for an Atwood machine. For objects in a rotating reference frame, it is negative two times the frame's angular velocity crossed with the object's velocity. For a spring it is zero at zero displacement, and the square of the velocity of a body initially at rest is equal to two times the displacement times this quantity. It is equal to velocity squared over radius for uniform circular motion, and force is equal to the product of (*) mass and this quantity. For 10 points, name this quantity that is the rate of change of velocity.
ANSWER: acceleration
15. The sculpture The Mature Age depicts this man's acrimonious split from his lover. This artist made his St. John the Baptist Preaching larger than life so as to avoid accusations of casting from a living model, which had plagued him since he exhibited The Age of Bronze. This lover of Camille Claudel portrayed (*) six leaders of a French city who agreed to be executed to save their city in his The Burghers of Calais. Many of this artist's best known pieces were intended to be part of the collection The Gates of Hell. For 10 points, name this French sculptor of The Kiss and The Thinker.
ANSWER: Francois-Auguste-Rene Rodin
16. A Puritan rebellion in this state converged at the Battle of the Severn. This state fought Pennsylvania in Cresap's War. This state's founder applied for its charter after failing with the Province of Avalon, and it was named for the wife of (*) Charles I. The words to "The Star-Spangled Banner" were written at Fort McHenry in this state. This state's 1649 Toleration Act was one of the first laws to guarantee religious freedom. For 10 points, name this state founded as a haven for Catholics by George Calvert, Lord Baltimore.
ANSWER: Maryland
17. This hero was told by Helenus to go find Philoctetes from the island of Lemnos. He set Palamedes up to be stoned to death. Eurycleia recognized this hero after seeing a scar he received while boar hunting. This mastermind behind the oath of Tyndareus listened to the (*) Sirens while tied to the mast of his ship. He claimed that his name was "nobody" before blinding Polyphemos. For 10 points, name this husband of Penelope whose ten-year journey back to Ithaca is depicted in a Homeric epic.
ANSWER: Odysseus [or Ulysses]
227-14-86-03117
18. This song's first verse contains the line "Hello, hello, my ace man, my Mellow" and asserts "John Wayne ain't got nothin' on my fringe game." Its second verse asks 'What you know about rockin' a wolf on your noggin?" This final single from The Heist features a repetitive saxophone riff and a hook in which (*) Wanz vows to "pop some tags" because "I only got twenty dollars in my pocket." For 10 points, name this 2012 song by Macklemore and Ryan Lewis about the wonders of used clothing. ANSWER: "Thrift Shop"
19. The proposed Xayaburi (SHY-ah-burr-ee) Giant Dam on this river has raised concerns from fishermen and farmers. The Za Qu (zah SHU) and Mun Rivers flow into this waterway, which is fed by the Ruak River in the Golden Triangle. The Tonle Sap is a lake that drains water into this river, which rises in China's Yunnan province and flows past (*) Vientiane. After composing much of the border between Laos and Cambodia, it comes to its mouth south of Ho Chi Minh City. For 10 points, name this river that cuts through much of southeast Asia and empties into the South China Sea in Vietnam. ANSWER: Mekong River
20. At one point in this novel, the protagonist is bothered by a group of nosy girls while ascending a staircase, prompting him to leave through a side door after purchasing several identical landscapes from Titorelli. In this novel's penultimate chapter, a supposed visitor never arrives at a cathedral, and the protagonist hears a parable about a man who perpetually waits at a door. That protagonist has an affair with $\left(^{*}\right)$ Leni, the nurse of Herr Huld, a lawyer who is defending him for an unknown crime. For 10 points, name this novel about Josef K. written by Franz Kafka.
ANSWER: The Trial [or Der Prozess]
21. The nucleolus of these cells is called the germinal spot. In plants, these cells are produced by the archegonium. These cells divide into four smaller cells, three of which have small amounts of cytoplasm and are called polar bodies. The outer membrane of these cells, called the zona pellucida, is where the acrosome reaction occurs. They're not neurons, but these are the (*) largest cells in the human body. These haploid cells form a zygote after being fertilized by their counterparts, sperm. For 10 points, name these female gametes produced in the ovaries.
ANSWER: egg cells [or ovum; or ova; or oocytes; or ovocytes; or ovarian follicles; prompt on gametocyte; prompt on gametes]
22. This character's lawn is unexpectedly mown after he arranges a meeting for the title character of the novel in which he appears. This man arranges a funeral which is only attended by the deceased's father and Owl Eyes. He realizes it is his thirtieth birthday on the day (*) Myrtle Wilson is killed. This character dates golfer Jordan Baker, and his second cousin is Tom Buchanan's wife Daisy. For 10 points, identify this West Egg resident and narrator of The Great Gatsby.
ANSWER: Nick Carraway [or Nick Carraway]
23. In this province, a planned golf course on land that once belonged to the Mohawk led to the Oka Crisis. When interviewed by Tim Ralfe about a different event in this province, the Prime Minister responded "just watch me." The only peacetime use of the War Measures Act occurred after James Cross was kidnapped in this province, sparking the (*) October Crisis during the premiership of Pierre Trudeau. This province's namesake city was founded for Henry IV by Samuel de Champlain. For 10 points, name this Canadian province that predominantly speaks French.
ANSWER: Quebec

1. A player in the lane during this game must be careful lest they be ganked by the jungler. For 10 points each:
[10] Identify this real-time strategy game by Riot Games, in which teams of five champions face off in an attempt to destroy each other's nexuses.
ANSWER: League of Legends [or LoL]
[10] League of Legends is similar in nature to this other game, originally a Warcraft III mod. Like in League, the two teams, which are named Sentinel and Scourge, each have five heroes.
ANSWER: Defense of the Ancients [or DotA]
[10] In League of Legends, these NPCs continually spawn and walk down the lanes until they encounter an enemy. If an inhibitor is destroyed, their "super" variety will also spawn.
ANSWER: minions
2. In a scene this play, the title character's bird Serena is decapitated by her lover. For 10 points each: [10] Name this play about the Count's daughter and her affair with the servant Jean. It ends with the title character walking off the stage with a razor, suggesting that she commits suicide.
ANSWER: Miss Julie [or Fröken Julie]
[10] This Swedish playwright of Miss Julie also wrote The Ghost Sonata, in which Jacob Hummel instructs Arkenholz to attend a performance of Richard Wagner.
ANSWER: August Strindberg
[10] This earlier Scandinavian author wrote such famous children's stories as "The Ugly Duckling" and "The Little Mermaid."
ANSWER: Hans Christian Andersen
3. During this conflict, one-tenth of all male colonists of military age were killed and the majority of colonial towns were raided by Indians. For 10 points each:
[10] Name this war which occurred in seventeenth-century New England. It is named for a leader of the Wampanoag tribe who led Indian forces against the Puritans.
ANSWER: King Philip's War [or Metacomet's War]
[10] One of the tribes that fought in King Philip's War were the Narragansett, who lived in what is now this smallest state by area.
ANSWER: Rhode Island and Providence Plantations
[10] Rhode Island was founded by this religious dissenter. He advocated for religious toleration, the separation of church and state, and humane interaction with Indians.
ANSWER: Roger Williams
4. In this novel, a wedding is called off after two characters quarrel over the question of a man remarrying after the death of his wife. For 10 points each:
[10] Name this novel featuring characters such as Squire Thornhill, who tricks Olivia, the older daughter of Charles Primrose, into marrying him.
ANSWER: The Vicar of Wakefield
[10] The Vicar of Wakefield is a novel by this author, who wrote about Kate Hardcastle in his play, She Stoops to Conquer.
ANSWER: Oliver Goldsmith
[10] The Vicar of Wakefield is briefly quoted in this Mary Shelley novel about a scientist who brings a monster to life.
ANSWER: Frankenstein: Or, the Modern Prometheus
5. This event included the implementation of an Action Programme, which led to greater freedom of speech and a plan to introduce multiparty government. For 10 points:
[10] Name this period of political liberalization in an Eastern Bloc country, which called for "Socialism with a human face."
ANSWER: Prague Spring [or Prazske jaro]
[10] The Prague Spring occurred in this now-defunct country in Central Europe. Its leaders included Alexander Dubcek.
ANSWER: Czechoslovakia [or Czechoslovak Socialist Republic]
[10] Czechoslovakia was officially dissolved in 1993 in this event. It followed a similarly named revolution which ended Communist rule in 1989.
ANSWER: the Velvet Divorce
6. In one of this artist's self-portraits, he holds a burning cigarette. For 10 points each:
[10] Name this expressionist painter who created a topless Madonna and included The Sick Child and Ashes in a series of twenty-four paintings known as The Frieze of Life.
ANSWER: Edvard Munch
[10] This painting by Munch depicts a man clutching his face in agony beneath a red-orange sky and two people walking behind him on a bridge.
ANSWER: The Scream [or Skrik]
[10] This painting by Munch from The Frieze of Life depicts a redheaded woman hungrily embracing a man and preparing to chow down.
ANSWER: The Vampire
227-14-86-03206
7. Answer the following about people from a certain Roman family, for 10 points each.
[10] Julius Caesar legendarily said "et tu" to this man, his supposed friend who was among the conspirators assassinating him.
ANSWER: Marcus Junius Brutus the Younger
[10] Caesar's Brutus was supposedly a descendant of the Brutus who led an uprising against this final king of Rome.
ANSWER: Lucius Tarquinius Superbus [or Tarquin the Proud; prompt on partial answer]
[10] Brutus led that revolt after the suicide of this virtuous woman by Tarquin's son. This wife of Lucius Collatinus suffered as a result of a debate between two men over whose wife was more virtuous.
ANSWER: Lucretia [or Lucrece]
8. Answer the following about recent breakthroughs in mathematics, for 10 points each:
[10] In April 2013, Zhang Yitang established a finite bound on gaps between these types of numbers, which are only divisible by one and themselves.
ANSWER: primes
[10] Also in April, Harald Helgfott claimed to have proven a weaker version of this other conjecture, which states that every even integer greater than two can be written as a sum of two primes.
ANSWER: Goldbach's Conjecture
[10] In 1995, Richard Taylor helped Andrew Wiles fix the hole in his proof of this man's "last" theorem. Euler generalized this French mathematician's "little" theorem with his totient function.
ANSWER: Pierre de Fermat
9. Name some pillars of Islam, for 10 points each.
[10] Every Muslim physically and financially able to do so must go on a pilgrimage to Mecca, which is known by this Arabic term.
ANSWER: Hajj
[10] The "zakat" is a mandatory form of this practice; it is similar to Christian "tithing" but is more directly targeted at the poor.
ANSWER: donating to charity [or alms or other equivalents]
[10] This is the declaration of faith in Islam. Honestly reciting this creed three times is considered by some Islamic scholars to be the only action necessary to convert to Islam.
ANSWER: Kalimat ash-Shahada
230-14-86-03209
10. In obstetrics, this compound is used to detect amniotic fluid. For 10 points each:
[10] Name this common lab compound that turns from yellow to its namesake color in a basic solution.
ANSWER: bromothymol blue
[10] Bromothymol blue is an example of one of these compounds sensitive to changes in pH .
ANSWER: pH indicators
[10] The pH of an acid is calculated as the log of the acid's conjugate base's concentration over the acid's concentration all plus this quantity.
ANSWER: pKa
014-14-86-03210
11. The motion of these entities through a medium is called propagation. For 10 points each:
[10] Name these oscillating entities occurring in transverse and longitudinal varieties.
ANSWER: waves
[10] This term refers to the superposition of two waves in such a way that the resultant wave has a diminished amplitude.
ANSWER: destructive interference [prompt on interference]
[10] For a wave, this term refers to the harmonics with higher frequencies than the fundamental frequency. The second harmonic produces the first one of these, and so on.
ANSWER: overtones
12. After Paganini acquired one of these instruments made by Stradivarius, he asked Berlioz to write Harold in Italy. For 10 points each:
[10] Identify this instrument, for which Bartok composed an incomplete concerto requested by William Primrose.
ANSWER: viola [do not accept violin]
[10] The viola unusually uses the "alto" form of this musical symbol, which is placed on the left of a bar of music to indicate its pitch. The treble and bass varieties are more common.
ANSWER: clef
[10] A sonata for flute, viola, and harp was composed by this Frenchman, better known for his Prelude to the Afternoon of a Faunt.
ANSWER: Claude Debussy [or Achille-Claude Debussy]
233-14-86-03212
13. Storage diseases affecting this organelle include Hunter syndrome and Fabry disease. For 10 points each:
[10] Name these organelles containing hydrolases that digest bacteria and other intracellular components. ANSWER: lysosomes
[10] These organelles also containing digestive enzymes break down fatty acids via oxidation. Plants include specialized ones called glyoxysomes.
ANSWER: peroxisomes
[10] Peroxisomes contain this enzyme that catalyzes the breakdown of hydrogen peroxide into hydrogen and oxygen.
ANSWER: catalase
14. This man's son Nwoye takes the Christian name Isaac after meeting missionaries. For 10 points each: [10] Name this wrestling champion of Umuofia. He accidentally kills Ezeudu's son at Ezeudu's funeral. ANSWER: Okonkwo
[10] Okonkwo is the protagonist of this Nigerian author's Things Fall Apart.
ANSWER: Chinua Achebe
[10] No Longer at Ease, the sequel to Things Fall Apart, deals with this grandson of Okonkwo, who joins the civil service but sinks into depression before eventually being captured for taking bribes.
ANSWER: Obi Okonkwo [prompt on Okonkwo]
192-14-86-03214
15. Algorithms for accomplishing this include the "quick" and "insertion" ones. For 10 points each:
[10] Name this process of ordering a set of data according to some property.
ANSWER: sorting
[10] This highly inefficient sorting algorithm repeatedly goes through the entire list, comparing each pair of items and swapping them if necessary, so that the largest elements float to the top.
ANSWER: bubble sort
[10] Bubble sort's shortcomings are most apparent when the list includes small elements toward the top, which are given this name.
ANSWER: turtles
16. This group's major cities included Byblos, Sidon, and Tyre. For 10 points each:
[10] Name this ancient civilization centered in modern-day Lebanon. They were prolific merchants and colonizers around the Mediterranean.
ANSWER: Phoenicians [or Phoenicia]
[10] One of Phoenicia's primary exports was cloth dyed with an expensive "Tyrian" dye of this color. ANSWER: reddish-purple
[10] The Phoenicians founded this city in modern-day Tunisia. This city was home to the explorer Hanno, and it fought Rome in the Punic Wars.
ANSWER: Carthage
185-14-86-03216
17. Early in this novel, Conrad is crushed by a giant helmet before his wedding with Isabella. For 10 points each:
[10] Name this novel, usually considered the first of its genre, in which Manfred mistakenly stabs his daughter Matilda while she meets with Theodore in a church.
ANSWER: The Castle of Otranto
[10] The Castle of Otranto is generally considered to be the first of this genre of fiction. A blend of horror and romance, popular writers in this genre included Ann Radcliffe.
ANSWER: Gothic fiction [accept Gothic novel]
[10] This novel by Jane Austen focuses on Catherine Morland, a young woman obsessed with Gothic novels.
ANSWER: Northanger Abbey
230-14-86-03217
18. This hero, along with his best friend Enkidu, kills Humbaba and the Bull of Heaven. For 10 points each:
[10] Name this partly-divine king of Uruk, the hero of an eponymous Mesopotamian epic.
ANSWER: Gilgamesh
[10] The Bull of Heaven was sent by this goddess. This goddess of love entered the underworld by removing one piece of clothing at each of its seven gates.
ANSWER: Ishtar
[10] Gilgamesh seeks advise from the sage Utnapishtim, famous for evading the consequences of one of these events with the help of Ea.
ANSWER: a flood [or the deluge; or equivalents]
192-14-86-03218
19. It is dedicated to Ezra Pound, whom it calls "il miglior fabbro." For 10 points each:
[10] Name this 1922 poem that includes sections titled "A Game of Chess" and "What the Thunder Said" and ends with the mantra "Shantih shantih shantih."
ANSWER: "The Waste Land"
[10] "The Waste Land" was written by this American poet of "The Love Song of J. Alfred Prufrock." ANSWER: T. S. Eliot
[10] This 1930 poem was Eliot's first long poem to be written after his conversion to Anglicanism, and it is titled for a Christian holiday.
ANSWER: "Ash-Wednesday"
20. This country's grand pensionary and his brother were overthrown by Orangists and disemboweled by an angry mob during its disaster year, or rampjaar. For 10 points each:
[10] Name this country that had gained independence from Spain in the Eighty Years' War.
ANSWER: Republic of the United Netherlands [or Dutch Republic; or United Provinces; or Republiek der Zeven Verenigde Nederlanden; prompt on Holland]
[10] The disaster year included wars with both England and France, the latter of which was ruled by this "sun king."
ANSWER: Louis XIV [prompt on Louis]
[10] Louis had earlier invaded the Netherlands in this war ended by the 1668 Treaty of Aix-la-Chappelle. In it, Louis was forced to return his Dutch conquests by an alliance of England and Sweden.
ANSWER: War of the Devolution
232-14-86-03220
21. These firearms were manufactured by their namesake "Repeating Arms Company." For 10 points each: [10] Name this type of lever-action rifle known as "The Gun That Won the West."
ANSWER: Winchester
[10] This actor starred in Anthony Mann's Western Winchester '73. He also starred opposite Grace Kelly in Rear Window.
ANSWER: Jimmy Stewart [or James Stewart]
[10] Rear Window was directed by this "Master of Suspense" who also directed Psycho and Vertigo. ANSWER: Alfred Hitchcock
