Collegiate Written by Ewan MacAulay, Grant Boggess, Austin Brownlow, Michael Chuber, Alex Dzurick, Joey
Novice 4 Goldman, Nicholas Karas, Melanie Keating, Paul Kelson, Benjamin Johnson, Grace Liu, Brian
Fall 2013 Mongilio, Itamar Naveh-Benjamin, Robert Pond, Victor Prieto, Jacob Reed, Graham Reid, Jihye Shin,
Packet 7 Jonathan Tong Xu, Eric Xu, and Haohang Xu. Edited by Andrew Hart.

1. One national park in this state contains the historic Beaver Meadows Visitor Center and is accessible via the city of Estes Park. This state contains a park with the highest sand dunes in North America and Medano Creek, which flows in punctuated bursts instead of a constant flow. The Black Ridge Canyon Wilderness lies on the namesake plateau of this state, which contains 53 "fourteeners," including Long's Peak, Mount Evans, and Mount Elbert, the tallest of the Rocky Mountains. For 10 points, name this state, home to Pike's Peak and Denver.

ANSWER: Colorado

- 2. This man's Popular Movement of the Revolution party established its slogan, "Neither left nor right," in the Manifesto of N'Sele. Lake Albert was briefly named for this man, whose government was ousted after he tried to force Tutsis to leave his country. Troops led by Laurent Kabila eventually toppled this man, who led a U.S.-backed coup following the death of Patrice Lumumba to take control of a country he later renamed Zaire. For 10 points, name this man whose authoritarian government ruled the Democratic Republic of the Congo until 1997. ANSWER: Mobutu Sese Seko [Kuku Ngbendu wa Za Banga] [or Joseph-Desire Mobutu]
- 3. The only living person to hold this title is Aga Khan IV, who belongs to the Nizari dynasty. The Mourning of Muharram commemorates the death of a holder of this title at the Battle of Karbala. One holder of this title underwent the Occultation and will eventually reappear accompanied by Jesus. That man is referred to as "the Mahdi" by members of the Twelver sect, whose name derives from their belief that there were twelve holders of this title. For 10 points, Shia Muslims use what title to refer to the divinely appointed successors of Muhammad? ANSWER: Shia Imams
- 4. This constant, which is equal to one over the square root of epsilon naught times mu naught, divides the time-averaged intensity to yield the classical electromechanical radiation pressure. Hippolyte Fizeau used a spinning mirror apparatus to approximate this value with a time-of-flight technique. Relativistic energy and momentum tend to infinity approaching this value, which is equal to about 3.00 times ten-to-the-eighth meters per second. For 10 points name this constant, the rate at which a photon moves through empty space.

ANSWER: **speed of light** in a vacuum [or **c**]

5. One play by this author centers on the murder of Bjorn Faulkner. In another work by this author of *Night of January 16th*, the pirate Dagnar Ranneskjold and Hank Rearden fight against the Equalization of Opportunity Act. One character created by this author almost has his career destroyed by Ellsworth Toohey and Gail Wynand. This author, who created Dagny Taggert and the architect Howard Roark, asked the question "Who is John Galt?" For 10 points, name this author of *Atlas Shrugged* and *The Fountainhead*.

ANSWER: Ayn Rand

6. In September 2013, one of these individuals released a book co-written with Brock Thoene about "living with your decisions." In addition to Lance Easley, another one of these individuals threw a hat on the ground that Kevin Ogletree slipped on. One of these individuals signaled interception while another signaled touchdown at the end of the infamous "Fail Mary" play between the Seahawks and Packers. For 10 points, name these scab officials who patrolled pro football games while the NFL played hardball with the real game officials.

ANSWER: NFL replacement referees [accept equivalents; prompt on partial answer]

- 7. One performer in this man's band, Juan Tizol, wrote the songs "Perdido" and "Caravan." This man, who wrote a suite based on African-American history, "Black, Brown, and Beige," co-wrote the song "Chelsea Bridge" with his most frequent collaborator. This composer and bandleader frequently worked with Billy Strayhorn in writing such standards as "Mood Indigo" and "Sophisticated Lady." He wrote a song that describes the title action as being "the quickest way to get to Harlem." For 10 points, name this jazz pianist who wrote "Take the A Train." ANSWER: [Edward Kennedy] Duke **Ellington**
- 8. This type of reaction can undergo an unusual two-step mechanism with a carbanion intermediate, called the "conjugate base." A quarternary nitrogen in a five-membered ring undergoes an pericyclic mechanism in the Cope type of this reaction. Stereochemistry of the products of these reactions is determined by Zaitsev's rule. The classic example of this reaction takes an alkyl halide and reacts it with a strong base, kicking off the halide and an adjacent hydrogen. For 10 points, name this type of a reaction that forms a double bond and comes in E1 and E2 varieties. ANSWER: eliminations
- 9. One painting from this movement shows the model Elizabeth Siddal in a white dress floating down a river. Another painting from this movement, which depicts Jesus holding a lantern and knocking on a door, is titled *The Light of the World*. One member of this group painted a sundial on the right side while a girl prays in the foreground in his *Beata Beatrix*. For 10 points, name this artistic movement featuring John Everett Millais, William Holman Hunt, and Dante Gabriel Rossetti, who all wanted to bring art back to a time before a certain Renaissance painter. ANSWER: **Pre-Raphaelite Brotherhood** [or **PRB**]
- 10. To secure the southern border, this ruler created a kingdom of Aquitaine, which even eventually gained control over the Spanish March. His court included a circle of educated clerics who produced a *renovatio*, including the scholar Alcuin of York and this ruler's biographer, Einhard. Aachen was the site of the Palatine Chapel and palace of this man, the son of Pippin the Short who was crowned Emperor of the Romans on Christmas Day 800 by Pope Leo III. For 10 points, name this Frankish King, the first Holy Roman Emperor.

ANSWER: <u>Charlemagne</u> [or <u>Charles le Grand</u>; or <u>Karl der Grosse</u>; <u>Charles the Great</u>; or <u>Charles I</u>; prompt on <u>Charles</u> or equivalents]

11. In one episode in this work, a Jew falls backwards down some steps after a jester waves a lump of brawn in his face. In another part of this work, a nobleman from Coningsburgh is hit in the chest with his own battle axe by a man nicknamed "The Black Sluggard," who has just returned from Palestine. A tournament attended by Prince John and the swineherd Gurth occurs in this novel, in which Cedric's protégé Rowena gasps when the title character's face is revealed. For 10 points, name this historical novel by Sir Walter Scott about a medieval Saxon knight.

ANSWER: Ivanhoe

12. This man developed the theory of governing elites, psychologically or culturally homogenous entities shaped by complex social forces, in *Mind and Society*. This man is the namesake of the "law of the vital few," which states that approximately 80% of effects come from about 20% of causes. Kalldor and Hicks generalized a concept named for this man that describes a situation in which no one individual can become better off without making another person worse off. For 10 points, name this Italian social scientist who names an "optimality."

ANSWER: Vilfredo [Federico Damaso] Pareto

13. This virus uses the small protein VPU to promote the proteolysis of antigens as they are made. Resistance to this virus is conferred by a 32-base-pair deletion that prevents the expression of the chemokine receptor CCR5. The fusogen Gp41 is exposed when Gp120 on the surface of this virus's capsid binds to a cell. One drug used to treat infection with this virus is AZT, which combats the reverse transcriptase this virus uses to infect host cells. For 10 points, name this lentivirus that reduces the number of CD4-plus helper T cells and causes AIDS.

ANSWER: HIV [or human immunodeficiency virus; do not accept "AIDS"]

14. This word is paired with "variations" in the title of a Benjamin Britten work using a theme by Purcell. One work with this word in the title was the opening piece of the original *Fantasia* and was composed by J.S. Bach, who also paired 24 of them with 24 preludes in his *The Well-Tempered Clavier*. Bach also paired one of these works in D minor with a D-minor toccata and wrote a composition on the "art" of this genre. For 10 points, name this contrapuntal musical form that builds on an original theme.

ANSWER: fugue [accept Art of Fugue or Die Kunst der Fuge]

15. This author created a mayor who tries to put a box on his head instead of a hat and argues that, because he goes to church every Sunday, he is more moral than Lyapkin-Tyapkin. This author also created that mayor's daughter, Marya, and wife, Anna Andreyevna, who are both proposed to by the same man. In that work by this author, the manservant Osip reveals that Khlestakov is only a minor civil servant. In another work, this author created Chichikov, who buys the rights to deceased serfs. For 10 points, name this author of *The Inspector General* and *Dead Souls*.

ANSWER: Nikolai [Vasilievich] Gogol

16. Many places belonging to this organization featured buildings known as kontors. This organization suffered a humiliating loss at Helsingborg that caused it to create the Confederation of Cologne. It was harassed by Klaus Stortebeker, who led the Likedeelers. This federation reached its peak after forcing Valdemar IV to sign the Treaty of Stralsund. It was headquartered in the city of Lubeck. For 10 points, name this Northern European trading alliance that dominated the Baltic Sea during the Middle Ages.

ANSWER: **Hanseatic** League [or **Hansa**]

17. Rounding errors mean that testing for safe division with these numbers requires care to avoid an overload. The standard formats must comprise two kinds of "Not a number" values, two infinites, and finite numbers for these numbers, whose currently accepted standard is IEEE 754. A common measure of computer performance is the number of operations using these numbers that can be performed in a second, a measure known as FLOPS. For 10 points, name these numbers that are represented using significant digits and an exponent.

ANSWER: floating point numbers [accept floating point operations or floats; do not accept "FLOPS"]

18. This man, who traced the origin of civil society to the first man who fenced in a piece of land and said "this is mine," wrote *Confessions* and *Reveries of a Solitary Walker*. "The Creed of a Savoyard Priest" is a section in a treatise that follows the education of a young man. This author of a *Discourse on Inequality* and *Emile* wrote about the divine right of kings and the "general will" in a philosophical work that opens "man is born free, and everywhere he is in chains." For 10 points, name this French Enlightenment philosopher who wrote *The Social Contract*. ANSWER: Jean-Jacques **Rousseau**

19. In one work by this writer, a farmer flies to heaven on a monstrous dung-beetle and later frees the goddess Peace from a pit. One work by this writer begins with a man complaining about the debts that his son's horse obsession has racked up and concludes with the burning down of the Socrates's "Thinkery." In another work by this playwright, Peisthetaerus works with the title avians to build a city between heaven and earth, Cloud-Cuckoo Land. For 10 points, name this Athenian comedic playwright of *The Clouds* and *The Birds*.

ANSWER: Aristophanes

20. In a House race, this man earned a lasting nickname from opponent Manchester Boddy because of a misleading pamphlet he distributed. This president, who signed the Anti-Ballistic Missile Treaty, employed the Southern Strategy to defeat a Minnesotan for the White House. This politician's first vice president, who resigned after a tax evasion scandal and decried "nattering nabobs of negativism," was Maryland Governor Spiro Agnew. For 10 points, Gerald Ford succeeded what president who resigned in disgrace after the Watergate scandal? ANSWER: Richard [Milhous] Nixon [accept Tricky Dick Nixon]

TB1. According to Ovid, this figure's blood was said to have caused the formation of corals in the Red Sea. Unlike her siblings Stheno and Euryale, this daughter of Keto and Phorcys was mortal. In one story, this figure was cursed after she was caught making love with Poseidon in Athena's temple. This figure's children included Chrysaor and Pegasus, who were born after she was beheaded by Perseus. For 10 points, name this Gorgon with snake-like hair whose gaze could turn people to stone.

ANSWER: Medusa

TB2. This author, in a novel that opens with a group of girls waltzing to an organ grinder's music on Vere Street, created a title character who rejects Tom's marriage proposal to continue her affair with the married Jim Blakeston. This author of *Liza of Lambeth* wrote a novel in which Blanche commits suicide shortly after marrying the stockbroker-turned-artist Charles Strickland. In another novel by this author, Mildred spurns the advances of the club-footed protagonist, Phillip Carey. For 10 points, name this author of *The Moon and Sixpence* and *Of Human Bondage*.

Answer: [William] W. Somerset Maugham

Collegiate Written by Ewan MacAulay, Grant Boggess, Austin Brownlow, Michael Chuber, Alex Dzurick, Joey
Novice 4 Goldman, Nicholas Karas, Melanie Keating, Paul Kelson, Benjamin Johnson, Grace Liu, Brian
Fall 2013 Mongilio, Itamar Naveh-Benjamin, Robert Pond, Victor Prieto, Jacob Reed, Graham Reid, Jihye Shin,

Packet 7 Jonathan Tong Xu, Eric Xu, and Haohang Xu. Edited by Andrew Hart.

1. This period began after the Third Estate swore the Oath of the Tennis Court. For 10 points each:

[10] Name this period, which included the storming of the Bastille and climaxed with the executions of Louis XVI and Marie Antoinette.

ANSWER: French Revolution [or Révolution française]

[10] This period during the French Revolution, during which the Committee of Public Safety sent hundreds to the guillotine, ended with the Thermidorian Reaction.

ANSWER: **Reign of Terror** [or The **Terror**; or La **Terreur**]

[10] After the Terror, France was led by this government divided into two Councils and overseen by five namesake executives. It was overthrown by Napoleon and replaced with the Consulate.

ANSWER: **<u>Directory</u>** [or **<u>Directoire</u>** executive]

2. This religion requires believers to only wear clothing that is red, black, gold, or green. For 10 points each:

[10] Name this religion founded by Leonard P. Howell, whose members eat Ital food and may belong to "Mansions."

ANSWER: Rastafarianism [or Rastafari Movement]

[10] Rastafarianism was founded in this Caribbean country where reggae music was developed.

ANSWER: Jamaica

[10] This longtime emperor of Ethiopia wasn't a Rastafarian himself, but he is revered by Rastafarians as their savior.

ANSWER: <u>Haile Selassie</u> I [prompt on partial answer; accept Ras Tafari <u>Makonnen</u> Woldmikael]

3. In this novel, Jonathan Harker travels to the title character's castle in the Carpathian Mountains. For 10 points each:

[10] Name this novel in which Van Helsing drives a stake through Lucy's heart and fills her mouth with garlic.

ANSWER: Dracula

[10] *Dracula* is a novel by this Irish author.

ANSWER: [Abraham] Bram Stoker

[10] In another novel by Stoker, a huge white one of these creatures with glowing green eyes ascends out of its lair to try to attack Adam Salton and Mimi Watford.

ANSWER: worms [accept The Lair of the White Worm]

4. This man advocated for a "strenuous life." For 10 points each:

[10] Name this U.S. president who served out the remainder of McKinley's second term and won the 1904 election.

ANSWER: Theodore **Roosevelt** Jr. [or **Teddy Roosevelt**; or **TR**]

[10] In Roosevelt's 1912 bid as the candidate for the Bull Moose Party, he lost to this Democrat who oversaw U.S. entry into World War I.

ANSWER: [Thomas] Woodrow Wilson

[10] This New York politician, who ran as the Republican nominee against Wilson in 1916, later served as Chief Justice of the Supreme Court from 1930 to 1941.

ANSWER: Charles Evans Hughes

- 5. These creatures use the waggle dance to communicate with each other about nectar and water sources to other members of their colony. For 10 points each:
- [10] Name these creatures whose colonies are collapsing worldwide.

ANSWER: honey**bee**s [or **Apis**]

[10] The honeybee waggle dance is often studied by scientists in this sub-field of zoology, which focuses on the objective observation of natural animal behavior.

ANSWER: ethology [accept word forms]

[10] This type of ethological learning, which was studied in greylag geese by Konrad Lorenz, is linked to a particular stage in life, such as offspring learning from their parents.

ANSWER: **imprint**ing [accept word forms]

6. One of this man's novels is interspersed with Pedro Camacho's radio dramas. For 10 points each:

[10] Name this 2010 Nobel laureate who wrote Aunt Julia and the Scriptwriter and The Time of the Hero.

ANSWER: [Jorge] Mario [Pedro] Vargas Llosa [prompt on partial last name]

[10] Vargas Llosa is a native of this South American country, where he once ran against Alberto Fujimori for president.

ANSWER: [Republic of/Republica del] Peru

[10] Vargas Llosa's *The War of the End of the World* is a historical novelization of the 19th-century War of Canudos in this country, the birthplace of Machado de Assis.

ANSWER: [Federative Republic of/Republica Federativa do] Brazil

7. This piece is orchestrated for children's choir, chorus, orchestra, and pre-recorded tape. For 10 points each:

[10] Name this composition commemorating the 9/11 attacks, which won the 2003 Pulitzer Prize for Music.

ANSWER: On the Transmigration of Souls

[10] This American minimalist of the opera Nixon in China composed On the Transmigration of Souls.

ANSWER: John Coolidge Adams

[10] Minimalist composer Philip Glass composed an opera depicting this physicist "on the beach."

ANSWER: Albert **Einstein** [accept **Einstein on the Beach**]

- 8. One consequence of this law is that there is no such thing as $H_1O_{1/2}$. For 10 points each:
- [10] Name this law, formulated by Dalton, which states that elements that combine into compounds have wholenumber ratios to each other.

ANSWER: [Dalton's] law of multiple proportions

[10] The law of multiple proportions is crucial for performing this operation, which assesses the relative quantities of reactants and products in a chemical reaction.

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

[10] Stoichiometry can be used to find this substance, which is the reactant that simply runs out first in a reaction.

ANSWER: <u>limiting reagent</u> [or <u>limiting reactant</u>]

9. In this novel, one character is invited to join a witches' Sabbath by Mistress Hibbins. For 10 points each:

[10] Name this novel in which Roger Chillingworth torments the preacher Arthur Dimmesdale, who eventually admits to getting Hester Prynne pregnant.

ANSWER: The Scarlet Letter

[10] The Scarlet Letter is by this American author of The House of the Seven Gables.

ANSWER: Nathaniel **Hawthorne** [or Nathaniel **Hathorne**]

[10] In Hawthorne's story "The Artist of the Beautiful," Owen Warland creates a mechanical creature of this type.

ANSWER: butterfly [prompt on more general answer like insect or bug]

- 10. This ruler proposed the Pancasila, or Five Principles. For 10 points each:
- [10] Name this leader who governed a "Guided Democracy" until he was removed from power following the 30th of September Movement.

ANSWER: Sukarno

[10] Sukarno was the first president of this archipelagic nation, which declared its independence in 1945 and established a capital at Jakarta.

ANSWER: [Republic of/Republik] Indonesia

[10] Suharto, who succeeded Sukarno, ordered the Indonesian invasion of this region that is now an independent country.

ANSWER: **East Timor** [or **Timor-Leste**; prompt on partial answer]

- 11. Name the following about sculptors of works that reside in the U.S., for 10 points each.
- [10] This Indian-British architect's "Sky Mirror" was installed in Rockefeller Plaza in 2006. He also designed "Cloud Gate" in Millennium Park, Chicago.

ANSWER: [Sir] Anish Kapoor

[10] Augustus Saint-Gaudens's Robert Gould Shaw Memorial is located at the edge of the "Common" in this northeastern City.

ANSWER: Boston

[10] This sculptor blasted the faces of Theodore Roosevelt, Thomas Jefferson, Abraham Lincoln, and George Washington into Mount Rushmore.

ANSWER: [John] Gutzon [de la Mothe] Borglum

- 12. For 10 points each, name these terms from data management.
- [10] This last-in-first-out data structure is governed by two main operations, push and pop.

ANSWER: stack

[10] In this tree-based data structure, which can be used to implement a sorting algorithm, the label of the ith node is smaller than the labels of any of its descendants.

ANSWER: heap

[10] In this form of automatic memory management, memory that is no longer occupied by objects in use in the program is reclaimed.

ANSWER: garbage collection [accept word forms of "collection"]

- 13. The execution of Thomas Scott occurred during this revolt. For 10 points each:
- [10] Name this period of Métis rebellion led by Louis Riel near a namesake "river of the north."

ANSWER: Red River Rebellion

[10] The Red River Rebellion occurred in this country, which absorbed the rebelling territory as its province of Manitoba.

ANSWER: Canada

[10] This first Canadian Prime Minister, who served for 19 years, dealt with the Red River Rebellion and the Pacific Scandal while in office.

ANSWER: John [Alexander] Macdonald

- 14. This practice was central to the New Fire Ceremony, which was held every 52 years to stave off the end of the world. For 10 points each:
- [10] Name this ritual that often involved ripping the heart out of the chest and presenting it to gods like Huitzilopochtli and Tezcatlipoca.

ANSWER: Aztec human sacrifice [accept equivalents; accept Flower Wars; do not accept "child sacrifice"]

[10] Carvings on the Temple of Skulls in Chichen Itza show the prominence of human sacrifice in this peninsula, home to the Mayan culture.

ANSWER: Yucatan Peninsula

[10] The Aztec practice of child sacrifice was a way of appeasing Tlaloc, a god of this phenomenon.

ANSWER: rain [accept equivalents]

- 15. This psychologist claimed that he could train a dozen healthy infants to excel in any profession as adults. For 10 points each:
- [10] Name this American psychologist who conditioned Little Albert to fear white things.

ANSWER: John [Broadus] Watson

[10] Watson was an advocate of this school of psychology, whose other major contributors included Ivan Pavlov and B.F. Skinner. It focuses on the conditioning of observable actions.

ANSWER: **behaviorism** [accept **behavioral** psychology or other word forms]

[10] In this study conducted by Watson and Harvey Carr, rats that were trained to run down a long alley smashed into the wall when the alley was shortened, producing a namesake sound.

ANSWER: kerplunk experiment

16. This capital was built as a compromise between two much larger cities. For 10 points each:

[10] Name this city, which was entirely planned by Walter and Marion Griffin.

ANSWER: Canberra

[10] Canberra is the capital of this country, also home to the cities of Alice Springs and Sydney.

ANSWER: Australia

[10] This longest river in Australia, which forms the border between New South Wales and Victoria, reaches the ocean at Lake Alexandrina in South Australia.

ANSWER: Murray River [accept Murray-Darling]

- 17. This man was opposed by a vigilante group called Los Pepes. For 10 points each:
- [10] Name this wealthy drug lord who smuggled over 15 tons of cocaine a day into the U.S. at the height of his power.

ANSWER: Pablo [Emilio] Escobar [Gaviria]

[10] Escobar hailed from this drug-riddled South American country, where he played a role in the assassination of this nation's presidential candidate Luis Carlos Galan.

ANSWER: [Republic of/Republica de] Colombia

[10] This second-largest city of Colombia, which shares its name with Escobar's drug cartel, was at one point considered the most violent city in the world because of cartel turf wars.

ANSWER: Medellin

18. This man's *Meditationes Sacre* contains a Latin aphorism meaning "knowledge is power." For 10 points each:

[10] Name this English thinker who wrote *The New Atlantis* and *Novum Organum Scientiarum*.

ANSWER: Sir Francis Bacon

[10] Francis Bacon helped develop this inductive process that often includes five steps: question, hypothesis, prediction, experiment, and analysis.

ANSWER: scientific **method** [prompt on partial answer]

[10] Thomas Kuhn's *The Structure of Scientific Revolutions* coined this two-word phrase to describe changes in basic assumptions that underlie scientific advancement.

ANSWER: paradigm shifts [prompt on revolutionary science]

19. This law implies that a quantity of heat can't be converted directly into work. For 10 points each:

[10] Name this law, which alternately states that heat will only flow spontaneously from a body of higher temperature to a colder.

ANSWER: second law of thermodynamics [prompt on partial answer]

[10] Another version of the second law states that this quantity will either remain the same or increase for a cyclic process, implying that the disorder of the universe is always increasing.

ANSWER: entropy

[10] The heat engine statement of the second law was developed by Planck and this scientist, who, with Joule, names a constant-enthalpy throttling process that results in cooling.

ANSWER: Lord Kelvin [or William Thomson; accept Joule-Thomson effect]

20. This artist made two versions of *The Dance*, in which a circle of nudes hold hands. For 10 points each:

[10] Name this French artist whose other works include *Harmony in Red*.

ANSWER: Henri [Emile Benoit] Matisse

[10] Matisse belonged to this artistic movement whose name comes from the French for "wild beasts."

ANSWER: **Fauvism** [accept word forms such as Les **Fauves**]

[10] Matisse painted a portrait of his wife titled for a "stripe" of this color, which is the color of the apple in front of a bowler-hat-wearing man's face in Rene Magritte's *Son of Man*.

ANSWER: **green** [accept any equivalent; or **Verte**]

21. These peoples consolidated during a namesake King Movement of the 1850s. For 10 points each:

[10] Name this ethnic group whose leaders co-signed the Treaty of Waitangi with the British.

ANSWER: Maori people

[10] The Maori are the native inhabitants of this island country with capital Wellington.

ANSWER: New Zealand [or Aotearoa]

[10] During the first half of the 19th century, the Maori engaged in this protracted series of civil wars, named for the European weapons with which they were fought.

ANSWER: Musket Wars