

2012 Collaborative Middle School Tournament

Round 6

Tossups

1. This element is the most malleable and ductile metal. Like platinum, this metal cannot be dissolved by either hydrochloric or nitric acid alone, but can be dissolved by a mixture known as aqua regia (AH-quah REE-jee-ah). Relativistic effects on its outermost electrons explain its color, which is similar to pyrite. For 10 points, name this precious metal whose Latin name, aurum, gives its atomic symbol, Au.

ANSWER: **gold** [or **Au** until mentioned]

2. In this story, a boy boards a train “wrapped in an apron of steam,” and, nearing his destination, sees the lights of the city as “lights of an ocean liner sailing on a frozen sea.” Upon arrival, he receives a gift of his choosing, which he later loses through a hole in his pocket. For 10 points, name this story in which the boy’s lost bell, which his parents cannot hear, is returned to him by Santa on Christmas.

ANSWER: *The **Polar Express***

3. This figure lost his first wife after she bounced so high she hit her head on the moon. He won a wrestling match with the Bear Lake Monster and wore a rattlesnake necktie. This figure was raised by coyotes until the age of fifteen and attempted to ride a tornado like a horse, creating Death Valley when he finally fell off. For 10 points, name this cowboy hero of American folklore.

ANSWER: **Pecos Bill** [prompt on **Bill**]

4. Areas in this region with substantially reduced object distribution are known as Kirkwood gaps and are formed by the gravitational strength of the planet behind it. One body in this region has a satellite known as Dactyl. Besides Ida, other objects located here include Pallas, Vesta, and the smallest dwarf planet in the Solar System, Ceres. For 10 points, name this ring of small astronomical bodies located between Mars and Jupiter.

ANSWER: **Asteroid Belt** [prompt on **asteroids**]

5. In 2011 this country and a country it almost entirely surrounds agreed to an exchange of border enclaves. Cuisine from this country includes the “tandoori” style of cooking and the use of curry. The Arabian Sea is to this country’s west; to its east lies the Bay of Bengal. For 10 points, name this country that nearly surrounds Bangladesh and disputes the Kashmir and Punjab regions with Pakistan.

ANSWER: Republic of **India**

6. In this book, Mr. Wickham goes to Brighton and runs off with Lydia. Another character in this book chooses not to dance with the protagonist or any of her four sisters when he first appears at a ball, though he changes his ways after he is accused of trying to split up Jane and Mr. Bingley. For 10 points, Elizabeth Bennett's relations with Mr. Darcy unfold in what novel by Jane Austen?

ANSWER: **Pride and Prejudice**

7. This structure was the site of the climactic scene in *North by Northwest*. A similar structure in Georgia was halted before Stone Mountain was completed. This sculpture designed by Gutzon Borglum is in the Black Hills. For 10 points, name this large sculpture that contains the granite faces of four presidents.

ANSWER: **Mount Rushmore**

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8. In order to destroy the Hōgyoku and defeat Aizen, this show's main character unleashes the final Getsuga Tensho. This anime's protagonist attains a new form while fighting against the Espada Ulquiorra. This anime begins when Rukia Kuchiki gives up her powers to the protagonist. For 10 points, identify this anime featuring Ichigo Kurosaki where Soul Reapers battle Hollows.

ANSWER: **Bleach**

9. This man became sole emperor of the Western Roman Empire following Maxentius' death at the Battle of Milvian Bridge. This man would later gain control of the Eastern Roman Empire following his victory over Licinius (lih-SIN-ee-uss) at the Battle of Adrianople. This man issued the Edict of Milan, which established religious toleration throughout the Roman Empire. For 10 points, name this first Christian emperor.

ANSWER: **Constantine the Great** [or **Constantine I**; prompt on **Constantine**]

10. Spiders possess a book form of this organ in their abdomens. The intake of these organs is measured as tidal volume. Emphysema is caused by obstruction of these organs, which expand when the diaphragm generates negative pressure. Bronchi are main tubes entering these organs whose alveoli are surrounded by capillaries. For 10 points, name these organs of the respiratory system that supply oxygen to the blood.

ANSWER: **lungs**

11. This poet delivered "The Gift Outright" at President John F. Kennedy's inauguration. One of his poems observes that "good fences make good neighbors" and is called "Mending Wall." His poem "Nothing Gold Can Stay" notes that "Nature's first green is gold." For 10 points, name this poet who stated in his most famous poem that he took "the road less traveled by, and that has made all the difference."

ANSWER: Robert Lee **Frost**

12. This nation's Diogo de Silves discovered the Azores. It split lands with Spain in the Treaty of Tordesillas (tor-day-SEE-yahs). This nation's Henry the Navigator promoted exploration, and its explorers were the first Europeans to round the Cape of Good Hope and sail to India. Those explorers were Bartolomeu Dias and Vasco da Gama. For 10 points, name this country that colonized Brazil.

ANSWER: **Portugal**

13. This quantity can be measured by a psychrometer (syeh-KRAH-meht-er) or a hygrometer. It can be computed as a ratio using either mixing ratio or partial pressure of water. At its maximum, the amounts of water evaporating and condensing are in equilibrium. For 10 points, water content divided by capacity gives what measure of moisture in the air, often expressed as a percent?

ANSWER: relative **humidity** [or **RH**]

14. Its mascot is named Mandeville, and it will begin with a show titled "Isles of Wonder," to be directed by Danny Boyle. Some of the venues to be used for it include Lord's Cricket Ground, Dorney Lake, Old Trafford, and Wembley Stadium. The Royal Mail will issue commemorative stamps for any British athlete who wins a gold medal at, for 10 points, what quadrennial athletic event, which begins July 27 in London, England?

ANSWER: 2012 **Summer Olympics** [accept **London Olympics** before "London" is read; prompt on **Olympics**]

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15. Cyrus the Great allowed this structure to be built to replace a similar building destroyed during Nebuchadnezzar II's reign. Judas Maccabaeus cleansed and rededicated this structure in events celebrated during Hanukkah. This building served as the Sanhedrin's meeting place and was mostly destroyed in 70 AD. For 10 points, the West, or Wailing, Wall is the only remaining part of the latter of what Jewish holy site?

ANSWER: **Second Temple** of Jerusalem [prompt on **Temple** of Jerusalem; do not accept "First Temple of Jerusalem"]

16. This composer's symphonic tone poems include one originally named *Rumba* and another that featured taxi cab horns in its premiere at Carnegie Hall. This composer of *Cuban Overture* and *An American in Paris* also wrote an opera set in Catfish Row that features the songs "It Ain't Necessarily So" and "Bess, You Is My Woman Now." For 10 points, name this American composer of *Porgy and Bess* and *Rhapsody in Blue*.

ANSWER: George **Gershwin** [or Jacob **Gershowitz**]

17. The Reconstruction Finance Corporation was an early attempt to address this event, which resulted in the formation of the SEC. Dorothea Lange (LANG) took a famous photograph of Florence Owens Thompson during it, and it was exacerbated by drought in the Midwest leading to the Dust Bowl. For 10 points, *Migrant Mother* was taken during what economic downturn in the 1930s that Franklin Roosevelt tried to solve with his New Deal?

ANSWER: **Great Depression** [accept **banking crisis** before "SEC" is read]

18. A building in this city contained as many as 17,000 stone seats and a circular proscenium, and an annual festival in this city included a competition between three writers of tragedies and satyr plays. Plays such as *The Birds* and *Antigone* (ann-TIH-goh-nee) were performed at the annual City Dionysia (dye-oh-NEES-yah) in, for 10 points, what city whose residents included the actor Thespis and the playwrights Aristophanes (air-iss-TAH-fah-nee) and Sophocles?

ANSWER: **Athens** [or **Athenai**]

19. Antenaressis, or Euclid's method, can be used to find this value given any two numbers. It can be also be found by multiplying two numbers and dividing by their least common multiple. For numbers which are relatively prime, this value is one. For 10 points, give the mathematical name for the largest number by which two or more numbers are evenly divisible.

ANSWER: **greatest common factor** [or **GCF**; or **highest common factor**; or **greatest common divisor**; or **highest common divisor**; do not accept "least common denominator"]

20. This mountain range was created by the subduction of the Nazca Plate. The southern part of this mountain range is found in Patagonia and, further south, Tierra del Fuego. The altiplano (all-tee-PLAH-noe), a plateau of this range, contains Lake Titicaca. This range contains the highest peak in the Western Hemisphere, Mount Aconcagua. For 10 points, name this mountain range of South America.

ANSWER: **Andes** Mountains

Extra. This goddess may have conceived children by eating lettuce. This "cow-eyed" goddess had a wagon pulled by peacocks. She sent a gadfly to sting a cow who had escaped from the hundred-eyed monster Argus. That cow, Io, was one of the women seduced by her philandering husband. For 10 points, name this queen of the Olympians and wife of Zeus.

ANSWER: **Hera**

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Bonuses

1. For 10 points each, identify these forces that are not the four fundamental forces.

[10] This force opposed to motion is sometimes caused by solids rubbing against each other and is a component of drag.

ANSWER: **friction**

[10] This force is exerted by a fluid to oppose the weight of an object.

ANSWER: **buoyant** force [or **buoyancy**]

[10] This force keeps an object in circular motion and always points inward, unlike a similarly-named fictitious force.

ANSWER: **centripetal** [do not accept “centrifugal”]

2. This man’s travels are documented in the book *Il Milione*. For 10 points each:

[10] Name this Italian merchant who traveled to China alongside his father and uncle, Niccolò and Maffeo.

ANSWER: Marco **Polo**

[10] Marco Polo was employed as an ambassador by this Mongol emperor, the grandson of Genghis Khan who sent an expedition to Japan that was thwarted by the kamikaze.

ANSWER: **Kublai Khan** [prompt on **Khan**]

[10] Kublai Khan was the founder of this Chinese dynasty, which had defeated the Song and was succeeded by the Ming.

ANSWER: **Yuan** Dynasty

3. It includes characters from the Bolkonsky, Rostov, and Kuragin families. For 10 points each:

[10] What notoriously long novel is set during Napoleon’s invasion of Russia?

ANSWER: **War and Peace** [or **Voyna E Mir**]

[10] *War and Peace* was written by this author of *The Death of Ivan Ilyich*.

ANSWER: Leo **Tolstoy**

[10] In this Tolstoy novel beginning with an observation about happy and unhappy families, the title lover of Count Vronsky commits suicide by throwing herself in front of a train.

ANSWER: **Anna Karenina**

4. For 10 points each, name these saints.

[10] This saint was commanded to “go... and repair my house” as he prayed at the San Damiano crucifix outside Assisi.

ANSWER: Saint **Francis** of Assisi

[10] This Spanish nun and cofounder of the Discalced Carmelites started the Carmelite Reform by opening St. Joseph’s Convent.

ANSWER Saint **Teresa** of Avila [accept St. **Teresa** of Jesus and **Teresa** de Cepeda y Ahumada]

[10] This cousin of Jesus prophesied his arrival, claiming, “I am not worthy to loosen his sandals.”

ANSWER: Saint **John the Baptist** [prompt on **John**]

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5. For 10 points each, identify these Muppets.

[10] This host of *The Muppet Show* sang “The Rainbow Connection” in *The Muppet Movie* and “Bein’ Green” on *Sesame Street*.

ANSWER: **Kermit** the Frog

[10] In the 2011 film, this Muppet has a human brother Gary and performs “The Whistling Caruso.”

ANSWER: **Walter**

[10] This character blows up his plumbing business in the 2011 film. His love interest is Camilla the Chicken.

ANSWER: **Gonzo** the Great [or The Great **Gonzo**]

6. Ivan Pavlov first studied these animals to understand the digestive system. For 10 points each:

[10] Pavlov later trained what animals to salivate when they heard a bell by always ringing a bell before he fed them?

ANSWER: **dogs**

[10] Pavlov was practicing the classical form of this type of learning in which an animal associates a stimulus with a particular response.

ANSWER: **conditioning**

[10] While conditioning is learned behavior, scratching in dogs is this type of genetically fixed behavior that an animal is able to perform from birth.

ANSWER: **instinct** [or **innate** behavior]

7. For 10 points each, name these parts of the Executive Branch that help keep America safe.

[10] This civilian U.S. agency replaced the Office of Strategic Services in 1947 and carries out covert operations at the request of the President.

ANSWER: **Central Intelligence Agency** [or **CIA**]

[10] The CIA and the Joint Chiefs of Staff advise this forum also created in 1947. It is headed by the President, and Condoleezza Rice once served as Bush’s Advisor from this forum.

ANSWER: **National Security Council** [or **NSC**]

[10] This Cabinet-level department was created in 2002 shortly after the 9/11 attacks.

ANSWER: Department of **Homeland Security** [accept Department of **HomeSec**]

8. For 10 points each, name these novels set during the Civil War.

[10] *Tomorrow is Another Day* was one suggested title for this novel about the romances of Scarlett O’Hara.

ANSWER: **Gone with the Wind**

[10] Henry Fleming’s wound is the title object of this novel by Stephen Crane.

ANSWER: *The* **Red Badge of Courage**

[10] Jethro Creighton comes of age in this novel by Irene Hunt.

ANSWER: **Across Five Aprils**

9. Examples of these shapes include the Koch curve and Sierpinski triangle. For 10 points each:

[10] Name these self-similar shapes whose name is based on the fact that their dimension is often a fraction.

ANSWER: **fractals**

[10] One fractal is a set of points named after this mathematician, the author of *The Fractal Geometry of Nature*, who passed away in 2010.

ANSWER: Benoit **Mandelbrot**

[10] Generating the Mandelbrot Set uses this set of numbers, each of which has a real part and an imaginary part.

ANSWER: **complex**

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10. This composer adapted “Cinderella” into the opera *La Cenerentola*. For 10 points each:

[10] Name this composer of *The Barber of Seville* who didn't compose any operas for the last four decades of his life.

ANSWER: Gioachino **Rossini**

[10] This was Rossini's last opera; in its third act, the title character instructs his son to "stay still" as he shoots an arrow at an apple on his head.

ANSWER: **William Tell** [or **Guillaume Tell**]

[10] This famous selection from *William Tell* ends with a rousing galop movement. This type of instrumental piece typically acts as a prelude to open an opera or musical.

ANSWER: **overture** [accept **William Tell Overture**]

11. In March 2011, Japan experienced a two-fold disaster. For 10 points each;

[10] It began on March 11, when an earthquake of magnitude 9.0 triggered one of these phenomena, whose name is Japanese for “harbor wave,” devastating the Pacific coast of Japan.

ANSWER: **tsunami**

[10] The tsunami knocked out power to generators cooling nuclear reactors at this Japanese nuclear power plant near the town of Okuma.

ANSWER: **Fukushima Daiichi** [accept either underlined part]

[10] The failure of cooling systems at Fukushima Daiichi caused this event, in which nuclear fuel reaches a high temperature and leaks through its containment vessel, releasing radioactivity into the environment.

ANSWER: nuclear **meltdown**

12. For 10 points each, name these Canadian provinces.

[10] This province, with capital at Toronto, is also home to Canada's capital city of Ottawa.

ANSWER: **Ontario**

[10] Extremists in this predominately French speaking province regularly agitate for secession.

ANSWER: **Quebec**

[10] The only officially bilingual province is this Maritime Province east of the state of Maine.

ANSWER: **New Brunswick**

13. The most recent book in this series is *Cabin Fever*. For 10 points each:

[10] Name the series written by Jeff Kinney about the life of Greg Heffley.

ANSWER: **Diary of a Wimpy Kid**

[10] This kid is Greg's best friend until their huge fight; his parents hire a replacement best friend for him in "The Ugly Truth."

ANSWER: **Rowley Jefferson** [accept either underlined name]

[10] This older brother of Greg “rules” according to the subtitle of the second "Wimpy Kid" book.

ANSWER: **Rodrick** Heffley [prompt on **Heffley**]

14. Gebhard von Blucher (BLOO-ker) and his Prussian troops aided the British at this battle. For 10 points each:

[10] Name this battle, a decisive 1815 defeat for Napoleon Bonaparte in Belgium that ended the Hundred Days and was his final defeat.

ANSWER: Battle of **Waterloo**

[10] The British were led by this man at Waterloo. He had earlier won the Battle of Salamanca in the Peninsular Campaign.

ANSWER: Duke of **Wellington** [or Arthur **Wellesley**]

[10] Nine days before Waterloo, a Congress in this Austrian city finished negotiating how to restructure what used to be Napoleon's Empire.

ANSWER: **Vienna** [or **Wien**; accept **Congress of Vienna**]

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15. Its distance from the Earth is one Astronomical Unit. For 10 points each:

[10] Name this star at the center of our solar system.

ANSWER: the Sun

[10] Astronomers believe that in about five billion years, the Sun will become one of these stars that are massive but have relatively low surface temperature.

ANSWER: red giant [prompt on partial answer]

[10] The evolution of stars often is tracked using this graph of luminosity vs. temperature.

ANSWER: Hertzsprung-Russell diagram [or HR diagram]

16. For 10 points each, identify these Leonardo da Vinci works that aren't the *Mona Lisa*.

[10] Around 1485, Leonardo drew this picture of a male figure in two superimposed positions that was said to have the ideal geometric human proportions.

ANSWER: Vitruvian Man [or Proportions of Man]

[10] This incomplete painting shows the Virgin Mary and Child in the foreground and workmen repairing a building in the background.

ANSWER: Adoration of the Magi

[10] Leonardo's painting of this scene, the final meal shared between Jesus and his disciples, is said to contain a hidden message.

ANSWER: The Last Supper

17. In one account, this Greek goddess floated to Earth in a scallop shell after her birth. For 10 points each:

[10] Name this Greek goddess of love and beauty.

ANSWER: Aphrodite [do not accept "Venus"]

[10] Aphrodite was married to this ugly blacksmith god, who ruled over volcanoes.

ANSWER: Hephaestus (heh-FESS-tuss)

[10] With Anchises (ann-KYE-sees), Aphrodite was the mother of this Trojan hero and the namesake of an epic by Virgil.

ANSWER: Aeneas

18. This king kills Duncan after hearing predictions made by three witches. For 10 points each:

[10] Name this title character of a Shakespearean tragedy.

ANSWER: Macbeth

[10] Macbeth becomes king of this historical country, whose James VI had become James I of England prior to this play's writing.

ANSWER: Scotland

[10] Act 2, Scene 3 of Macbeth features a porter delivering both sides of this kind of joke, adding "in the name of Beelzebub" to the standard response, "Who's there?"

ANSWER: knock-knock joke

19. This is a computation bonus. For 10 points each, find the slopes of the lines going through the following pairs of points. Express all non-integers as reduced fractions.

[10] (-1,8) and (1,0)

ANSWER: -4

[10] (3,1/3) and (6,2/3)

ANSWER: 1/9

[10] (0.2,5) and (0.3,10)

ANSWER: 50

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20. Name these robber barons, for 10 points each.

[10] This founder of the Standard Oil trust is the richest man in history, adjusted for inflation. His grandson would donate the land for the United Nations Headquarters.

ANSWER: John Davison **Rockefeller**

[10] This Scottish-born businessman founded a steel company, which he sold to J.P Morgan. A controversial strike took place at one of his steel plants in Homestead, Pennsylvania.

ANSWER: Andrew **Carnegie**

[10] This “Commodore” made his initial money in the shipping industry, but later made his fortune in the railroad industry. He is also the namesake of a Tennessee university.

ANSWER: Cornelius **Vanderbilt**

Extra. This is the first book in a trilogy also containing *Twenty Years After* and *The Vicomte of Bragelonne*. For 10 points each:

[10] Name this novel whose title characters, Porthos, Athos, and Aramis, defend the king against the machinations of Cardinal Richelieu.

ANSWER: *The* **Three Musketeers**

[10] The trilogy is collectively named after this protagonist who joins the three musketeers.

ANSWER: **D’Artagnan**

[10] Name the author of the D’Artagnan Romances as well as *The Count of Monte Cristo*.

ANSWER: Alexandre **Dumas** pere