

2010 Collaborative Middle School Tournament

Round 1

Tossups

1. Three square windows can be seen in the back of this painting, and the back of a chair takes up its lower center portion. The central figure is wearing red and blue with his hands on a table; to his right is an effeminate figure believed to be the Apostle John. Judas clutches a bag of silver in, for 10 points, what Leonardo da Vinci painting that depicts Christ's final meal with his disciples?

ANSWER: *The **Last Supper***

2. The "law of" these objects states that the torque ("tork") on one side is equal to the torque on the other side. These objects can be classified as first class, second class, or third class depending on the location of the fulcrum. For 10 points, name these simple machines, familiar examples of which include a wheelbarrow and see-saw.

ANSWER: **levers**

3. Landmarks on this island include the El Yunque ("YOON-kay") rainforest and Fort San Felipe del Moro. Humacao ("HOO-muh-COW"), Caguas ("CAW-gwahs"), Bayamon ("BYE-uh-moan"), and Ponce ("PAWN-say") are some of its municipalities. The largest municipality shares the name given to the island by Columbus, San Juan. For 10 points, identify this island, a United States commonwealth in the Caribbean.

ANSWER: **Puerto Rico**

4. While travelling back to his hometown, this man solves a riddle with the answer of "man." He kills his own father over the right-of-way at a crossroads. This man fathers his daughter Antigone ("ann-TIH-go-nee") by his own mother Jocasta ("joe-CASS-tuh"), fulfilling a prophecy made at his birth. For 10 points, name this title character of plays by Sophocles ("SOFF-oh-clees"), including one in which he is at Colonus ("CALL-oh-nuss") and one in which he is *Rex*, or *The King*.

ANSWER: **Oedipus**

5. Policies during this war included the "strategic hamlet" program and the use of Agent Orange as a defoliant. The Battle of Khe Sanh ("KAY SAWN") was fought during this war, which ended with the fall of Saigon, a city that was renamed after the victorious side's leader, Ho Chi Minh ("HO CHEE MIN"). For 10 points, a memorial wall in Washington, DC lists the American casualties of what conflict in Southeast Asia?

ANSWER: **Vietnam** War

6. The DNA in this organelle ("or-guh-NELL") is inherited only from the mother. The inner membrane of this organelle contains folds known as cristae ("CRISS-tay") and encloses its matrix. This organelle is the site of oxidative phosphorylation ("ox-ih-DAY-tiv FOSS-for-ill-AY-shun"), which occurs at the end of the electron transport chain. For 10 points, name this organelle responsible for cellular respiration, which produces ATP and thus provides energy for the cell.

ANSWER: **mitochondria** ("MY-toe-KON-dree-uh") [or **mitochondrion**]

7. The most winning woman he ever knew was hanged for poisoning three little children for their insurance-money. Irene Adler, always THE woman to this man, outwitted him during his investigation of "A Scandal in Bohemia." This man returned in "The Adventure of the Empty House" after battling Professor Moriarty to the death. For 10 points, name this detective faithfully accompanied by John Watson.

ANSWER: **Sherlock Holmes** [accept either]

The 2010 Collaborative Middle School Tournament was overseen by Andy Watkins and written by Nick Bergeon, Matt Bollinger, Matthew Dirks, Zach Foster, David Garb, Jeff Hoppes, Sandy Huang, Idris Kahloon, Tanay Kothari, Kay Li, Charles Martin, Trygve Meade, Aidan Mehigan, Charlie Rosenthal, Donald Taylor, and Dwight Wynne. Jeff Hoppes, Jeff Price, Donald Taylor, and Dwight Wynne served as the primary editors and proofreaders.

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8. This man composed a ballet called *The Creatures of Prometheus* (“pro-MEE-thee-us”), and Leonato is a major character in his opera *Fidelio* (“fih-DAY-lee-oh”). His third symphony was originally written to honor Napoleon and was called *Eroica* (“air-OH-ih-kuh”). A later symphony by this man borrows from Schiller's "Ode to Joy" for its choral final movement. For 10 points, name this composer whose fifth symphony begins with a fate knocking at the door theme and who went deaf.

ANSWER: Ludwig von **Beethoven**

9. The oldest person to hold this position was Roger Taney (TAW-nee). This office serves as Chancellor of the Smithsonian, and also presides over Presidential impeachment trials. It was held by Charles Evans Hughes, John Marshall, and Earl Warren, the latter of whom wrote an opinion that mandated the so-called “Miranda Rights”. For 10 points, name this position currently held by John Roberts Jr., the head of the federal judiciary.

ANSWER: **Chief Justice** of the Supreme Court

10. The Euler (“OIL-er”) line passes through the orthocenter (“OR-tho-SEN-ter”), circumcenter, and centroid (“SEN-troyd”) in this figure. The area of this polygon can be found by halving the product of two sides and the sine of the angle opposite of the third side or by simply using Heron’s formula. It is the only polygon that cannot be concave, because its angles must add to 180 degrees. For 10 points, name this polygon with three sides.

ANSWER: **triangle**

11. In the buildup to this battle, the losing commander set up a fortification at Gloucester (“GLAU-ster”) shortly after retreating from Williamsburg. A key turning point in this battle was the arrival of reinforcements under Count Rochambeau (“RO-sham-BO”). British naval forces under Thomas Graves failed to break through the French blockade. For 10 points, name this final Revolutionary War battle, after which Lord Cornwallis surrendered.

ANSWER: Battle of **Yorktown**

12. He compared himself to Robert Downey Jr. on a Colbert (“cole-BEAR”) Report appearance in which he defended himself from rumors of a lifestyle change. While Kermit the Frog lectured about the W, this character turned it into an N, a V, and then an I. He notes, “that’s good enough for me” while singing about what C is for. For 10 points, name this blue Muppet known for catchphrases like “Me want cookie!”.

ANSWER: **Cookie Monster**

13. One theory of this entity’s creation states that a Mars-sized body named Theia (“THEE-uh”) collided with its parent planet. This object exhibits synchronous (“SIN-kro-nuss”) rotation with its parent planet, and that rotation results in the namesake "dark side" of this object. The Sea of Tranquility lies on, for 10 points, what astronomical body responsible for the Earth’s tides, its largest natural satellite?

ANSWER: **Moon**

14. This man wrote about an animal who steals from the farmers Boggis, Bunce and Bean in *The Fantastic Mister Fox*. He also wrote about a girl with psychic powers who reads every book in the library and then loses her powers in Miss Honey's class in his book *Matilda*. A better known book by this man sees its title fruit get stuck on top of the Empire State Building. For 10 points, name this author of *James and the Giant Peach*.

ANSWER: Roald **Dahl**

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15. One senator from this state was the only one not to cast a vote on the December 24th Senate Health Care Bill. That man, George Voinovich (“VOY-no-vitch”), earned his first major political post by defeating Dennis Kucinich (“koo-SIN-itch”). Other political figures from this state include retired Senator John Glenn and current Governor Ted Strickland. For 10 points, what swing state of the 2004 election has its capital at Columbus?

ANSWER: **Ohio**

16. One variety of this faith is outlined in the Pali (“POLLY”) Canon. Another variety venerates those who become enlightened but remain in *samsara* (“sam-SHR-uh”), called *bodhisattvas* (“bo-dee-SOTT-vuhs”). Those varieties are *Theravada* (“THERE-uh-vah-duh”) and *Mahayana* (“MAH-hi-yawn-uh”). Adherents to another variety of this faith meditate on *koans* (“KO-awns”) such as “What is the sound of one hand clapping?”. For 10 points, name this Asian faith that venerates Siddhartha Gautama (sid-DAR-thuh go-TOM-uh”).

ANSWER: **Buddhism** [or word forms such as **Buddhists**]

17. He fulfilled a prophecy by accidentally killing his grandfather Acrisius (“uh-CRIZZ-ee-us”) with a discus. Acrisius had imprisoned his mother, Danae (“duh-NAY-ee”), but Zeus visited her as a golden shower. This man borrowed the invisibility cap of Hades, the reflective shield of Athena, and the winged sandals of Hermes. He slew a sea monster that was about to consume Andromeda, whom he made his wife. For 10 points, name this figure who beheaded Medusa.

ANSWER: **Perseus**

18. The Andean type of these entities occurs beneath a continental plate, and it is at these sites that about 20% of Earth's crust has been consumed. This antithesis (“an-TITH-uh-sis”) of the mid-oceanic ridge is usually typified by lines of volcanoes running parallel near an oceanic trench. For 10 points, identify this region where tectonic (“tec-TON-ick”) plates collide, and one goes underneath the other.

ANSWER: **subduction zone**

19. This man described a trip around America with his poodle in *Travels with Charley*. In a novella by this man, George shoots Lennie to prevent him from being lynched. This man also wrote about the Joad family's attempt to escape the Depression by moving to California from Oklahoma. For 10 points, identify this American author of *Of Mice and Men* and *The Grapes of Wrath*.

ANSWER: John Ernst **Steinbeck**

20. This man fought against Ariovistus (“air-ee-oh-VIS-tuss”), a German leader, and Vercingetorix (“ver-KING-uh-TOR-ix”), a chieftain of the Arverni (“ar-VEHR-nee”) whose defeat is described in this man's book, *Commentaries on the Gallic Wars*. He led his troops across the Rubicon to start a civil war with Pompey, one of his partners in the First Triumvirate. For 10 points, name this Roman leader who was assassinated by Brutus on the Ides of March.

ANSWER: Julius **Caesar**

Extra. This state has the fewest members in its state legislature; it is also the only state with a unicameral one. It was the northern of two territories mentioned in an 1854 act introducing popular sovereignty. The western part of this state contains Chimney Rock. When it became a state in 1867 it renamed its capital after a recently assassinated president. For 10 points, name this state whose largest city is Omaha.

ANSWER: **Nebraska**

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Bonuses

1. These metals release hydrogen gas in a violent explosion when introduced to water. For 10 points each:

[10] Give the term for metals in Group 1 of the periodic table.

ANSWER: **alkali** ("AL-kuh-lye") metals

[10] This alkali metal with atomic number 11 combines with a bicarbonate ("bye-CAR-bo-nate") ion to form baking soda. The chloride of this alkali metal is known as table salt.

ANSWER: **sodium** [or **Na**]

[10] All known isotopes of this heaviest naturally occurring alkali metal are radioactive.

ANSWER: **francium** [or **Fr**]

2. This son of Lamech ("LAH-meck") "found favor in the eyes of the Lord," according to Genesis 6:8.

For 10 points each:

[10] Name this Biblical figure who cursed his grandson Canaan ("KAY-nun"). His three sons were Ham, Japheth ("JAY-feth"), and Shem.

ANSWER: **Noah** [accept **Noe**]

[10] Noah was the head of the only family saved from this event, during which he was instructed to find a male and female of each animal, and take them aboard an ark he built.

ANSWER: the great **flood** [or **deluge**]

[10] To establish the presence of dry land, Noah sent forth a dove. During the dove's second trip, it returned with a piece taken from this kind of tree.

ANSWER: **olive**

3. For 10 points each, name these deserts:

[10] This largest North African desert is separated from the rest of Africa by the Sahel ("suh-HAIL").

ANSWER: **Sahara** Desert

[10] The largest desert in Asia is this cold desert in Mongolia, the home of wild Bactrian ("BACK-tree-un") camels.

ANSWER: **Gobi** Desert

[10] The oldest desert in the world is this Southern African desert. It is mostly located in, and provides the name of, the country whose capital is Windhoek ("vind-HOYK").

ANSWER: **Namib** Desert [do not accept "Namibia"]

4. For 10 points each, answer these questions about the Spanish-American War:

[10] This man, later assassinated by Leon Czolgosz ("CHOL-gosh"), was President during the Spanish-American War.

ANSWER: William **McKinley**

[10] One cause of the war was the supposed bombing of this U.S. ship that led to the slogan: "Remember the [blank]!"

ANSWER: USS **Maine**

[10] As a result of the war, the U.S. gained control of this island, the largest of the Marianas ("mare-ee-AHN-us"). It is still an American territory today.

ANSWER: **Guam**

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5. The title item is attached to the central character because she committed adultery. For 10 points each:
[10] Name this novel which concludes with the confession and death of Reverend Arthur Dimmesdale ("DIMS-dale").

ANSWER: *The **Scarlet Letter***

[10] This author of "Rappaccini's ("RAP-uh-CHEE-nees") Daughter" and *The House of the Seven Gables* wrote *The Scarlet Letter*.

ANSWER: Nathaniel **Hawthorne**

[10] Reverend Dimmesdale had an affair with this main character of *The Scarlet Letter*. This mother of Pearl is tormented by Roger Chillingworth.

ANSWER: **Hester Prynne** [accept either name]

6. This symphony contains a number of variations on the tune of *Twinkle, Twinkle, Little Star*. For 10 points each:

[10] Name this symphony in which the soft melody is interrupted by a shockingly loud G-chord, possibly intended to wake up the audience.

ANSWER: *Symphony No. **94** in G Major* [or the **Surprise** *Symphony*]

[10] This Austrian composer of the *Farewell* and *Philosopher* symphonies wrote the *Surprise Symphony*.

ANSWER: Joseph **Haydn**

[10] The *Surprise* is one of a collection of twelve Haydn symphonies named for this city, where they premiered. This city is the capital of the native country of Edward Elgar and Benjamin Britten.

ANSWER: **London**

7. For 10 points each, name these Republican candidates in the 2008 presidential election:

[10] This Arizona senator rode the momentum from a win in New Hampshire to become the Republican nominee.

ANSWER: John **McCain**

[10] This ordained minister won the Iowa caucus. He is a former Governor of Arkansas.

ANSWER: Mike **Huckabee**

[10] Huckabee's choice for Secretary of Defense would have been this former California representative. Despite him getting the endorsement of Ann Coulter, poor showings led to him dropping out after the Nevada caucus.

ANSWER: Duncan Lee **Hunter**

8. Mitosis ("my-TOE-sis") is the process by which most eukaryotes ("you-CARE-ee-oats") divide. For 10 points each, name these things about cell division:

[10] In contrast to mitosis, this is the process by which most prokaryotes ("pro-CARE-ee-oats") divide.

ANSWER: **binary fission**

[10] During this phase of mitosis, the chromosomes are pulled to the poles of the cell.

ANSWER: **anaphase**

[10] This process reduces the number of chromosomes by half. In animal cells, this process forms haploid ("HAP-loyd") gametes.

ANSWER: **meiosis**

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9. In this book, Mrs. Olinski (“oh-LIN-skee”) chooses a group called “The Souls” to represent her school in the Academic Bowl. For 10 points each:

[10] Name this book about Noah Gershom, Nadia Diamondstein, Ethan Potter, and Julian Singh.

ANSWER: *The **View From Saturday***

[10] *The View From Saturday* was written by this author of *Silent to the Bone*.

ANSWER: Elaine Lobl **Konigsburg**

[10] E. L. Konigsburg also wrote this book about Claudia and Jamie Kincaid leaving home to live in the Metropolitan Museum of Art.

ANSWER: *From the **Mixed Up Files of Mrs. Basil E. Frankweiler***

10. For 10 points each, answer the following about the civil rights movement:

[10] This 1954 court case stated that “separate educational facilities are inherently unequal,” essentially ending the segregation of schools.

ANSWER: **Brown** v. Board of Education of Topeka

[10] The Civil Rights Act of 1964 invalidated segregationist laws known by this phrase taken from a 19th-century minstrel show.

ANSWER: **Jim Crow** laws

[10] This man, who was John F. Kennedy’s Vice President, was President when the Civil Rights Act of 1964 passed.

ANSWER: Lyndon **Johnson** [accept **LBJ**; prompt on **Johnson**]

11. The pronunciation of this movie was printed on all of its promotional media in the United States, and its plot is set into motion by an old lady with a shotgun. For 10 points each:

[10] Name this animated movie that sees Remy use Linguini's hair to cook French cuisine, and sees the critic Anton Ego consume the title entity at Gusteau's (“goose-TOES”) restaurant.

ANSWER: **Ratatouille** (“RAT-uh-TOO-ee”)

[10] This company created *Ratatouille*. Based in Emeryville, California, it was purchased by the Walt Disney Company in 2006 after producing critically acclaimed films like *Toy Story* and *Finding Nemo*

ANSWER: **Pixar** Animation Studios

[10] This former CEO of Pixar was behind the sale to the Walt Disney Company. He is better known as the CEO of a company that produces the iPhone and iPod.

ANSWER: Steve **Jobs**

12. At least one part of this bonus requires computation. For 10 points each, answer these questions about angles:

[10] Besides degrees, name one other unit for measuring angles.

ANSWER: **radians** or **grades** or angular **mils**

[10] Given that pi radians are equal to 180 degrees, convert 120 degrees to radians. Exact value in terms of pi, or decimal value rounded to two decimal places, are each acceptable.

ANSWER: **$2\pi/3$** radians [“**two pi over three**” or equivalent; or **2.09**]

[10] One degree is divided into 60 of these units, which are themselves divided into seconds.

ANSWER: **minutes**

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13. They attacked the monastery of Lindisfarne ("LIN-diss-farn") in 793. For 10 points each:
[10] Give this term for Scandinavian raiders who attacked Western Europe during the Middle Ages.

ANSWER: **Vikings**

[10] Many Vikings settled in this region of northwestern France, later the site of the Allied D-Day invasion during World War II.

ANSWER: **Normandy**

[10] William, Duke of Normandy, earned his nickname "the Conqueror" by beating the English in this 1066 battle.

ANSWER: Battle of **Hastings**

14. For 10 points each, name these tragedies by Shakespeare:

[10] In this play, the title Danish prince seeks revenge on his uncle Claudius. Claudius's advisor Polonius ("puh-LOAN-ee-us") is the father of Ophelia ("oh-FEEL-ee-uh"), the protagonist's sweetheart.

ANSWER: *The Tragedy of **Hamlet**, Prince of Denmark*

[10] In this play, the title Thane of Cawdor ("KAW-door") conspires with his wife to kill both the Scottish king Duncan and his own friend Banquo ("BANE-kwoh") before being killed by Macduff.

ANSWER: *The Tragedy of **Macbeth***

[10] In this play, the treachery of Iago causes the title Moor to smother his wife Desdemona ("dez-duh-MOAN-uh").

ANSWER: ***Othello**, the Moor of Venice*

15. This entity is composed of sixty point six percent silicon dioxide ("dye-OX-ide"), and makes up about six percent of the earth's total weight. For 10 points each:

[10] Name this forty-kilometer-deep entity, the layer of the earth closest to the surface.

ANSWER: **crust**

[10] This is the name for the region between the mantle and the crust. Its namesake discovered that tremors moved through this region faster than both the mantle and the crust.

ANSWER: **Mohorovičić** ("mo-ho-RO-vitch-itch") Discontinuity [or **Mohorovičić Boundary**]

[10] This region of the mantle is beneath the lithosphere and extends between 100 and 200 kilometers downwards. Also known as the low velocity zone, it is characterized by low density and high pressure liquid materials.

ANSWER: **asthenosphere** ("us-THEN-oh-SPHERE")

16. He assumes a number of pseudonyms in order to get revenge on those who wronged him, including Caderousse ("KAW-duh-roose") and Fernand Mondego ("mon-DAY-go"). For 10 points each:

[10] Identify this former prisoner in the Chateau d'If ("SHAT-oh DEEF") who assumes a title of nobility thanks to the Abbe Faria ("AH-bay fuh-REE-uh").

ANSWER: Edmond **Dantes** ("DON-tays") [accept the **Count** of **Monte Cristo** or Lord **Wilmore** or Abbe **Busoni**]

[10] Philippe, the twin of Louis XIV, is the central figure in this work. He is forced to wear the title object due to his resemblance to the king.

ANSWER: *The **Man in the Iron Mask*** [accept *The **Viscount of Bragolonne*** or ***Louise de la Valliere***]

[10] Edmond Dantes is the protagonist of *The Count of Monte Cristo*, which was written by this author of *The Man in the Iron Mask*.

ANSWER: Alexander **Dumas** ("DOO-mah") père [do not accept "Dumas fils" or anything indicating "the younger"]

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17. This figure owns a belt that doubles his strength, and once lost a wrestling contest with Old Age. For 10 points each:

[10] Name this Norse thunder deity.

ANSWER: **Thor**

[10] A special glove is used to wield this object, Thor's hammer, which always returns to its thrower.

ANSWER: **Mjollnir** ("mee-OLL-neer")

[10] While fishing with Hymir ("HIGH-mere"), Thor hooked this creature, and almost killed it, but Hymir cut the line. At Ragnarok ("RAG-nuh-rock"), Thor will kill this creature, but its venom will kill him.

ANSWER: **Jormungandr** ("YOR-mun-gond") [or **Iormungadr**; accept **Midgard Serpent** or **World Serpent**]

18. This building was built for Edgar J. Kaufman and its cantilevered balconies rise above the title entity. For 10 points each:

[10] Identify this building located in southwestern Pennsylvania.

ANSWER: **Fallingwater**

[10] This architect born in Oak Park, Illinois designed the Robie House, located at the University of Chicago, and also built Fallingwater.

ANSWER: Frank Lloyd **Wright**

[10] This building in Spring Green, Wisconsin served as the summer home of Frank Lloyd Wright. The west version of this building is in Scottsdale, Arizona.

ANSWER: **Taliesin**

19. They worshipped gods such as Huitzilopochtli ("HWEET-zil-oh-POACHED-lee"), the hummingbird god of war. For 10 points each:

[10] Name this Native American empire of central Mexico, which was noted for performing human sacrifice in the temples of Tenochtitlan ("TEN-oach-tit-LAWN").

ANSWER: **Aztec** empire [accept **Mexica**]

[10] Aztec rule collapsed after the forces of this Spanish conquistador ("con-KEES-tah-door") launched an attack on the Aztec capital.

ANSWER: Hernan **Cortes**

[10] Cortes captured this Aztec emperor, whose "halls" are referenced in the Marine Corps hymn.

ANSWER: **Montezuma** II [accept **Moctezuma** II or **Motecuhzoma** Xocoyotzin]

20. In 1997 the rover Sojourner arrived at this planet and began to send back images of the Ares Vallis ("AIR-ees VAL-iss"). For 10 points each:

[10] Identify this fourth planet from the sun, whose nickname comes from it being covered in iron (III) oxide or hematite ("HEE-muh-tite").

ANSWER: **Mars**

[10] This larger moon of Mars, named after the Greek God of fear, was discovered by Asaph Hall.

ANSWER: **Phobos**

[10] This volcano, the tallest mountain in the solar system, is located on Mars.

ANSWER: **Olympus Mons**

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Extra. At least one part of this bonus requires computation. Amy and Meg run the hundred-meter dash, and Amy finishes when Meg is at the eighty-meter mark. For 10 points each:

[10] You can find how long it took Amy to run the race by using the formula $d = rt$, where d is distance and t is time. What does r stand for?

ANSWER: rate [or average speed; or other clear-knowledge equivalents]

[10] If Amy ran the race in a third of a minute, find Meg's average speed in meters per second.

ANSWER: 4 meters per second

[10] If both runners run at the same speed, how far behind the starting line should Amy start the next race if they want to cross the finish line at the same time?

ANSWER: 25 meters [it takes Meg 25 seconds to run 100 meters; in that time Amy can run 125 meters]