

2011 Collaborative Middle School Tournament

Round 9

Tossups

1. In one common lab demo, a balloon is shattered after being treated with nitrogen in this form. At room temperature and standard pressure, only bromine and mercury are in this phase. These substances are used to fill a tube in thermometers and barometers. They take the shape of their container, but do not expand to fill it, unlike gases. For 10 points, name this state of matter that can boil and is produced by melting.

ANSWER: **liquid** phase [or **liquids**]

2. The characters in this novel are either “biguns” or “littluns.” In this novel, a fat asthmatic is killed by a falling rock that also shatters a conch shell, and a group of choir boys led by Jack Merridew kill a sow and impale her head on a stick as an offering for “the beast.” Ralph, elected leader of a group of stranded boys, fails to prevent their descent into savagery in, for 10 points, what novel by William Golding?

ANSWER: ***Lord of the Flies***

3. In this work, potted plants are visible above the left shoulder of one of the central figures, and part of a red barn can be seen on the right. Architecture in the background is in the Carpenter form of its title style. This painting’s models were the painter’s dentist and his sister, Nan. For 10 points, name this regionalist Grant Wood work that depicts a woman and her pitchfork-holding father.

ANSWER: ***American Gothic***

4. In 2003, this person warned that the Iraq War would create 100 bin Ladens. This person did not have a vice president until he appointed Omar Suleiman (OH-mar sue-LAY-mon) to that position. He originally declared he would not resign, which caused Tahrir Square to “[erupt] with anger,” but reversed that decision the next day. For 10 points, name this former president and subject of mass uprisings in Egypt.

ANSWER: Hosni **Mubarak**

5. All solutions of Diophantine (DYE-oh-FAN-teen) equations are in this set. This set is closed under addition, subtraction, and multiplication, but not division, and is denoted by a boldface Z. The absolute value of any number in this set except 0 is a natural number. Rational numbers can be expressed as the quotient of two of these kinds of numbers. For 10 points, give the term that applies to the set of whole numbers and their negatives.

ANSWER: **integers**

6. In this war, a group of primarily immigrant soldiers defected to the opposing army and became known as the St. Patrick’s Battalion. During the war, Winfield Scott led the capture of Veracruz (ver-uh-KROOZ) after forces under Zachary Taylor won battles at Monterrey and Buena Vista (BWAY-nah VEES-tah). For 10 points, name this war fought during the presidency of James Polk, which concluded with the signing of the Treaty of Guadalupe Hidalgo (gwahd-ah-LOO-pay hi-DAHL-goh).

ANSWER: **Mexican-American War**

7. In rotational motion, this quantity can be obtained by taking one half of the moment of inertia times the angular velocity squared. In an elastic collision, both momentum and this quantity are conserved. It equals one half times mass times velocity squared. For 10 points, name this energy of objects in motion, contrasted with the potential type.

ANSWER: **kinetic energy** [accept **KE**; accept **kinetic** energy after “energy”]

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8. This work opens with stories of a pilot who misread his directions and a friend who was distracted by a salmon hatchery. This book's protagonist runs off with his baby brother Gabe to avoid punishment by "Release." The title character is able to turn off the speaker, see colors, and transfer memories from the past world. For 10 points, what novel about a "Receiver of Memories" named Jonas was written by Lois Lowry?

ANSWER: *The **Giver***

9. The island of Marajo (mah-RAH-hoh) is located at the mouth of this river which was named by Spanish conquistador Francisco de Orellana (day OH-ray-YAH-nah) for the warrior women of Greek mythology. This river's source lies in the Andes of Peru, but it flows more than 4,000 miles east where it empties into the Atlantic Ocean. Electric eels, anacondas, and piranhas are among the wildlife found in, for 10 points, what river that drains the rainforests of Brazil?

ANSWER: **Amazon** River [accept Rio **Amazonas**]

10. This building was constructed with help from Hiram (HYE-ruhm), King of Tyre ("TIRE"). It contained two large pillars named Jachin (JAH-hin) and Boaz. It was ostensibly built on Mount Moriah, which is now home to the Dome of the Rock. This building housed the Ark of the Covenant. After it was destroyed by Nebuchadnezzar (NEH-boo-kah-NEZZ-er), it was rebuilt, only to be destroyed again in 70 CE. For 10 points, identify this place of worship first built by Solomon.

ANSWER: **temple** of **Jerusalem** [accept **temple** of **Solomon** before "Dome of the Rock;" prompt on **temple**]

11. Reverend Shannon works as a tour guide in this author's *Night of the Iguana*. In another play, after Jim O'Connor reveals he is engaged to Laura, Tom Wingfield leaves his family. One of his characters has "always depended on the kindness of strangers;" that character is institutionalized by Stanley Kowalski. For 10 points, name this author of *The Glass Menagerie* who created Blanche DuBois (doo-BWAH) in *A Streetcar Named Desire*.

ANSWER: (Thomas Lanier) "Tennessee" **Williams** [accept *Night of the Iguana* before it is read]

12. Genes related to this condition include the *c-sis* and p53 genes. The human papillomavirus (pahp-uh-LOH-muh-veye-ruhs), HPV, can cause one form of this disease, which is known as a sarcoma when it affects connective tissue and a melanoma if affects the skin. Metastasis (muh-TAS-tuh-sis) refers to the spread of this disease to other organs. It is caused by malignant tumors. For 10 points, name this uncontrolled growth of cells often treated with chemotherapy.

ANSWER: **cancer**

13. This team won the NFL championship in 1957, but is the only NFC team to never play in a Super Bowl since the start of the Super Bowl era. Former stars for this team are Doak Walker, Billy Sims, and Barry Sanders. Its current quarterback is Matt Stafford. In 2008 it became the first team to lose all sixteen regular season games. For 10 points, name this team that plays in the NFC North with the Packers, Vikings, and Bears.

ANSWER: Detroit **Lions** [or **Detroit** Lions]

14. This state contains the Tongass National Forest and the "Valley of Ten Thousand Smokes." The Alexander Archipelago is on one side of its "Inside Passage;" on the other side is this state's panhandle. The Brooks Range is an extension of the Rocky Mountains into this state. This state's city of Wasilla (wuh-SILL-uh) is a suburb of its largest city, Anchorage. For 10 points, name this largest and northernmost U.S. state.

ANSWER: **Alaska**

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15. One mission in this program docked with the spacecraft used by Soyuz (soy-“OOZE”) 19. The numerically first mission in this program was retroactively named after a fire burst out during a test run. Harrison Schmitt, a geologist, was part of its last mission, number 17. One mission in this program spawned the line, “Houston, we’ve had a problem.” For 10 points, name this NASA program whose mission 11 saw man first walk on the moon.

ANSWER: **Apollo** Program [accept **Apollo** Extension Series or **Apollo** Applications Program before “first”]

16. This dynasty established the House of Wisdom, or Bayt al-Hikma (BITE all HEEK-mah), at which algebra was invented. Under al-Mu’tasim (al MOO-tah-SEEM), this dynasty established an army of military slaves known as Mamluks (MAMM-lukes). The last member of this dynasty was rolled up in a carpet and trampled to death after the sack of Baghdad in 1258. Harun al-Rashid (hah-ROON al rah-SHEED) ruled during its political peak. For 10 points, name this Arabian dynasty that succeeded the Umayyads (OO-my-AHDS).

ANSWER: **Abbasid** Caliphate [or **Abbasids**]

17. One famous work for this instrument is *Caprice No. 24* by Paganini (pag-uh-NEE-nee). In Berlioz’s (BER-lee-ohz) *Symphonie Fantastique* (fan-tas-TEEK), a head bouncing from a guillotine is depicted by this instrument playing *pizzicato* (PITZ-ee-KAH-toe). The concertmaster of an orchestra is the first chair of this instrument, several of which were crafted by Stradivarius. For 10 points, name this string instrument higher in pitch than a viola.

ANSWER: **violin**

18. In one part of this work, Madame de Villefort (veel-FOR) goes on a poisoning spree for her son's inheritance, and the title character saves Valentine by building her resistance. In another part, Abbé (AH-bay) Faria gives lessons to the title character in the Château d'If (shah-TOE DEEF). For 10 points, Mondego (mahn-DAY-go) and Danglars (dahn-GLAHR) conspire to imprison the title character, Edmond Dantes (DAN-tayss), in what Alexandre Dumas (doo-MAH) novel about a self-made nobleman?

ANSWER: *The **Count of Monte Cristo*** [or *Le **Comte de Monte-Cristo***]

19. In one myth, these creatures rose from the blood spilled by Uranus when his son Cronus castrated him. They chased Oedipus (ED-uh-puhs) for wedding his mother and are believed to punish those who swear false oaths. Their members include Alecto (uh-LEK-toh), Megaera (muh-JEER-uh), and Tisiphone (ti-SIF-uh-nee). For 10 points, name these fearsome female winged deities of vengeance from Greco-Roman mythology.

ANSWER: **Erinyes** [accept **Eumenides**; accept **Furies**; accept **Dirae** (dahy-ree)]

20. This nation’s breakup was achieved by the actions of Milan Kucan (mee-LAHN koo-CHAHN) and Franjo Tudman (FRAHN-yoh TOOJ-mahn), and led to war crimes charges against Radovan Karadzic (RAH-duh-vahn kuh-RAH-jich) and Slobodan Milosevic (SLOH-buh-dahn muh-LOH-suh-vich). For almost half of its history, Marshal Tito was the leader of this country, part of which became Serbia and Montenegro after both Croatia and Slovenia declared independence. For 10 points, identify this Balkan nation that broke apart in the early 1990s.

ANSWER: **Yugoslavia**

Extra. Seven laws that apply to non-Jews are named for this figure, whose nakedness was uncovered by one of his sons. An agreement this figure made with God is symbolized by the rainbow. He was the son of Lamekh (LAH-meck) and had three sons, Japheth (JAY-feth), Ham, and Shem. To confirm that one of his jobs was complete, he sent a dove to check for dry land. For 10 points, identify this Biblical character who took two animals of each kind in his ark.

ANSWER: **Noah** [or **Noakh**; accept **Noahide** laws before “nakedness”]

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Bonuses

1. For 10 points each, identify these poetic forms.

[10] These poems have the rhyme scheme “A-A-B-B-A”. Many of them begin with a line about a man from Nantucket.

ANSWER: **limericks**

[10] William Shakespeare wrote 154 of these fourteen-line poems, including one beginning “Shall I compare thee to a summer’s day?”.

ANSWER: **sonnets**

[10] The Dylan Thomas poem “Do Not Go Gentle into That Good Night” is an example of this form of nineteen-line poem.

ANSWER: **villanelles**

2. The standard details of this system were outlined in the *Almagest* (AL-muh-jest). For 10 points each:

[10] Name this model of the universe in which the sun, moon, planets, and stars all orbit the earth.

ANSWER: **geocentric** model [accept **geocentrism**; accept **Ptolemaic** model/view/system, but do not reveal that answer unless it is given]

[10] This Greek astronomer from Alexandria wrote the *Almagest*. In it, he recorded the tenets of geocentrism that became known as his namesake system.

ANSWER: **Ptolemy** of Alexandria [accept Claudius **Ptolemy**; accept Claudius **Ptolemaeus**]

[10] This Polish astronomer laid the foundation for modern astronomy with the development of his heliocentric model of the universe.

ANSWER: Nicolaus **Copernicus** [accept Niclas **Koppernigk**]

3. For 10 points each, answer the following about recent songs by the band Muse.

[10] This song from the album *Black Holes and Revelations* asks “don’t you know I suffer?” and “can you hear me mourn?”.

ANSWER: “**Supermassive Black Hole**”

[10] “Supermassive Black Hole” appeared in this movie based on a Stephanie Meyer book. The film follows Bella Swan as she begins her relationship with Edward Cullen.

ANSWER: **Twilight**

[10] This other song from *Black Holes and Revelations* contains the line “No one’s going to take me alive, the time has come to make things right” and was playable on *Guitar Hero III*.

ANSWER: “**Knights of Cydonia**”

4. For 10 points each, name the type of reaction in which...

[10] A substance burns in the presence of oxygen.

ANSWER: **combustion**

[10] A reactant gains electrons. It occurs at the cathode of an electrochemical cell.

ANSWER: **reduction**

[10] Two soluble ions combine to form an insoluble product.

ANSWER: **precipitation**

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5. He once transformed into a stallion to pursue his sister Demeter (dih-MEE-ter), who was disguised as a mare. For 10 points each:

[10] Name this son of Cronus and Rhea (REE-uh) who wields a trident in his role as the Greek god of the sea.

ANSWER: **Poseidon**

[10] Poseidon is the father of this Cyclops, who was blinded by Odysseus before Odysseus escaped from this figure by tying himself underneath a sheep.

ANSWER: **Polyphemus** (pol-uh-FEE-muhs)

[10] Poseidon once produced the Spring of the Acropolis by throwing a spear into the ground in a contest to name this city. However, his sister gave this city the olive tree and won the contest.

ANSWER: **Athens**

6. This man fought Huascar (WAHS-car) during the War of the Two Brothers. For 10 points each:

[10] Name this ruler who was strangled at the hands of Spanish conquistadors after converting to Christianity. He lost his capital of Cuzco to the Spanish when he failed to fill a room with gold.

ANSWER: **Atahualpa** (AH-tah-WAHL-pah)

[10] Atahualpa ruled this empire with Huyana Capac (hoo-YAHN-ah kah-PAHK). It was located in modern-day Peru and had a system of roads extending out from Macchu Picchu.

ANSWER: **Inca** Empire

[10] The Inca Empire was eventually conquered at the hands of this Spaniard. He formed an alliance with the dissatisfied Chimu (chee-MOO) against Atahualpa.

ANSWER: Francisco **Pizarro** Gonzalez

7. This is a computation bonus. For 10 points each, answer the following about the number of faces of various solid figures.

[10] How many total faces does a square-based pyramid have?

ANSWER: **5**

[10] How many total faces does a triangular prism have?

ANSWER: **5**

[10] Of the five Platonic solids, the icosahedron (ahy-koh-suh-HEE-druhn) has the most faces. How many faces does an icosahedron have?

ANSWER: **20**

8. The Society of Independent Artists refused to display this piece, because the artist signed the name “R MUTT” instead of his actual name. For 10 points each:

[10] Name this so-called “sculpture,” which is basically just a urinal lying on its back.

ANSWER: “**Fountain**”

[10] “Fountain” was created, but not actually built, by this French Dadaist (DAH-dah-ist). His other artwork includes a reproduction of the *Mona Lisa* with a mustache drawn on it.

ANSWER: Marcel **Duchamp** (doo-SHOMP)

[10] Duchamp gave this name to everyday objects presented as art. Examples include “Fountain,” a bicycle wheel, and a shovel.

ANSWER: **ready-mades** [prompt on **found art**]

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9. His competitors include Mr. Prodnose, Mr. Fickelgruber, and Arthur Slugworth. For 10 points each:

[10] Name this chocolate factory owner created by Roald Dahl.

ANSWER: Willy **Wonka** [prompt on **Willy**]

[10] This is the last name of Charlie, who wins a golden ticket allowing him to visit Wonka's factory with his Grandpa Joe.

ANSWER: **Bucket**

[10] This book, which takes place after Charlie inherits the factory, is the sequel to *Charlie and the Chocolate Factory*.

ANSWER: ***Charlie and the Great Glass Elevator***

10. For 10 points each, name some American presidents who were the first of their kind.

[10] This current president is the first African-American president.

ANSWER: Barack Hussein **Obama II**

[10] This first Catholic president dealt with the Cuban Missile Crisis.

ANSWER: John Fitzgerald "Jack" **Kennedy** [accept **JFK**]

[10] This first president to be born as an American citizen served as Andrew Jackson's Secretary of State.

ANSWER: Martin **van Buren**

11. For 10 points each, name these characters from *One Thousand and One Nights*.

[10] To avoid execution by King Shahryar (SHAH-ree-ar), this woman tells him a different story each night but never reveals the ending.

ANSWER: **Scheherazade** (shuh-her-uh-ZAH-duh)[accept **Shahrazad**]

[10] One of the stories is about this boy, whose uncle traps him in a cave with a magic ring and a magic lamp.

ANSWER: **Aladdin** [accept **Ala al-Din**]

[10] Another story is about this brother of Cassim, who sneaks into a den of thieves and steals all their gold.

ANSWER: **Ali Baba**

12. This opera's plot involves a love triangle between Don Jose, Escamillo (es-kah-MEE-yoh), and the title woman, a cigarette factory worker. For 10 points each:

[10] Name this opera set in Spain that includes a habanera (hah-buh-NYAIR-uh) dance.

ANSWER: **Carmen**

[10] This man was the French composer of *Carmen*.

ANSWER: Georges **Bizet** (bee-ZAY)

[10] Name the bullfighting profession of Escamillo, who sings its namesake "song."

ANSWER: **toreador** [accept **Toreador Song**]

13. For 10 points each, name these Asian islands.

[10] Chinese nationalists expelled from the mainland settled on this island, whose capital is Taipei.

ANSWER: **Taiwan** [accept **Formosa**]

[10] Mount Fuji is located on this island, the largest of Japan's four main islands and the southern neighbor of Hokkaido (ho-KYE-doh).

ANSWER: **Honshu**

[10] The volcanoes Mount Pinatubo (pin-uh-TOO-boh) and Mount Mayon (mah-YAWN) are located on this island, the largest in the Philippines.

ANSWER: **Luzon** (loo-SAWN)

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14. This poet hears the “varied carols” of a carpenter, mason, and other workers in “I Hear America Singing,” a poem found in his collection *Leaves of Grass*. For 10 points each:

[10] Name this poet who wrote “Song of Myself.”

ANSWER: Walt **Whitman**

[10] In this other Whitman poem, the title figure “lies/fallen cold and dead” even though “our fearful trip is done”.

ANSWER: “**O Captain, My Captain**”

[10] “O Captain, My Captain” was written to lament the death of this assassinated leader. Whitman also wrote the poem “When Lilacs Last in the Dooryard Bloom’d” about this man.

ANSWER: Abraham **Lincoln**

15. The Treaty of Paris called for this conference to convene with “all the powers engaged on either side in the present war.” For 10 points each:

[10] Identify this 1815 conference in a namesake Austrian city, which was held to settle open issues from recent European conflicts.

ANSWER: **Congress of Vienna**

[10] The Congress of Vienna was chaired by this person, an Austrian foreign minister and advisor to Francis I.

ANSWER: Klemens Wenzel von **Metternich**

[10] Klemens von Metternich resigned from his position in this year during which revolts occurred in France and Germany and Franz Joseph I took the Austrian throne.

ANSWER: **1848**

16. This array has the triangular numbers as its third diagonals and its rows sum to powers of two. For 10 points each:

[10] Identify this mathematical structure in which each number is the sum of the two numbers above it.

ANSWER: **Pascal’s triangle**

[10] The entry in the k th position of the n th row of Pascal’s triangle can be found by applying this operation to n and k .

ANSWER: binomial **combination** [accept binomial **choose**; accept $n \text{ C } k$]

[10] Binomial combinations can be evaluated using this mathematical function, the product of all the positive integers up to a given number.

ANSWER: **factorial** function [prompt on **gamma** function]

17. The first person to undergo this process was Ulrich (OOL-rik) of Augsburg. For 10 points each:

[10] Identify this procedure whereby a deceased person is added to the list of saints recognized by the Catholic Church.

ANSWER: **canonization** [accept word forms of **canonize**]

[10] To become a saint, a deceased person must be associated with two of these events. They can best be described as unexpected events attributed to divine intervention by the saint.

ANSWER: **miracles**

[10] Martyrs and people who perform one miracle can receive this recognition, after which they earn the title of “blessed.”

ANSWER: **beatification** [accept word forms of **beatify**]

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18. For 10 points each, name these leaders of the 112th United States Congress.

[10] This former Speaker of the House now serves as the House Minority Leader despite her inability to control the conservative members of her party.

ANSWER: Nancy Patricia D'Alesandro **Pelosi**

[10] This Ohio politician took over Nancy Pelosi's job as Speaker of the House in January 2011. He served as House Minority Leader during the last two congressional terms.

ANSWER: John Andrew **Boehner** (BAY-ner)

[10] This man holds the seat for the Seventh Congressional District of Virginia. He took over as the House Majority Leader after serving two terms as the House Minority Whip.

ANSWER: Eric Ivan **Cantor**

19. For 10 points each, name these ways in which the government deals with money.

[10] This government agency falls under the authority of the Department of the Treasury and collects taxes for the government.

ANSWER: **IRS** [or **Internal Revenue Service**]

[10] This organization, currently headed by Ben Bernanke, serves as the central bank of the U.S. and manages the money supply.

ANSWER: **Federal Reserve** System [accept The **Fed**]

[10] This organization manages failed banks, collects premiums from its members based on the risk of their collapse, and insures up to \$250,000 of individual deposits.

ANSWER: **FDIC** [or **Federal Deposit Insurance Corporation**]

20. For 10 points each, name these organelles.

[10] This site of cellular respiration, the cell's "powerhouse", contains DNA inherited only from the mother.

ANSWER: **mitochondria** (mye-toe-KON-dree-uh) [accept **mitochondrion**]

[10] These organelles, which function in the organization of the mitotic spindle, consist of nine triplets of microtubules and are found only in animal cells.

ANSWER: **centrioles** (SEN-tree-ohl)

[10] This highly acidic organelle breaks down cellular waste products and molecules ingested by a cell.

ANSWER: **lysosomes** (LYE-soe-sohm)

Extra. For 10 points each, identify the following three-dimensional shapes.

[10] Rotating a rectangle about any of its sides gives this shape. Its volume is found using by the formula "V" equals pi times "r squared" times "h".

ANSWER: right circular **cylinder**

[10] Rotating a circle around any line passing through its center gives this shape.

ANSWER: **sphere**

[10] Rotating a circle around any coplanar line not passing through or intersecting the circle gives this donut-shaped figure.

ANSWER: **torus**