

Round 4 1st Section Toss-up Questions

Question #1: Mathematics – Math Concepts

10 points

The Lissajous [lees-ah-zhoo] curve with a phase shift of one-fourth pi and a frequency ratio of two is one of these shapes. This shape is generated by the polar equation r equals one divided by the quantity one plus cosine theta. Rays that are parallel before reflecting off one of these shapes will converge to a point. This shape is the locus of all points the same distance from a fixed line, called a directrix, and a fixed point, called a focus. The graph of a quadratic function is this kind of shape. Name this shape generated by the equation y equals x squared.

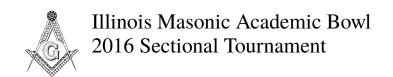
parabolas [prompt on conic
sections or conics]

Question #2: Literature – British Literature

10 points

This character was invited to "crush a cup of wine" by an illiterate servant after he read aloud a guest list. This character was called a "beautiful tyrant" and "fiend angelical" by his love interest after he asks "What light through yonder window breaks?". He paid an apothecary 40 ducats [DUK-uts] for a lethal drug. Prince Escalus banished this character following his murder of Tybalt [TIB-alt]. Name this "star-crossed lover" of the Montague family, whose poison consumption leads Juliet to stab herself in a Shakespeare play.

Romeo Montague [prompt on **Montague** before it is mentioned]



Round 4 1st Section Toss-up Questions

Question #3: Science – Earth Science

10 points

A recent study of these objects at El Tatio
[TAH-tee-oh], including El Jefe [HEH-fay], in Chile, emphasized the importance of underground bends and loops in their structures. These formations name a type of opal silica also known as siliceous [sih-LIH-see-us] sinter. These formations are similar to the fumaroles [FYOO-muh-"roles"] located on sides of volcanoes. A valley of these objects is on Kamchatka Peninsula, but the largest collection of them is in Yellowstone National Park. These formations are also similar to hot springs, but they erupt. Name these formations, such as Old Faithful, that shoot water and steam into the air.

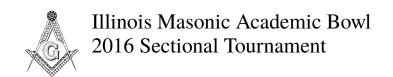
geysers [prompt on hot
springs]

Question #4: Social Studies – World History

10 points

Theodore Roosevelt used the indemnity money from this event to create a scholarship program. This event included the Siege of the International Legations, which was stopped by the Eight-Nation Alliance. Attacks during this event against Dagu [DAH-goo] forts by foreign ships led the Empress Dowager Cixi [DOW-uh-jer SEE-shee] to support the rebels. The rebels in this uprising used exercises that they believed made them immune to bullets; they targeted foreigners and local Christians and were known at first as the Righteous and Harmonious Fists. Name this 1900 uprising in Beijing.

Boxer Rebellion [accept
Boxers or Boxer Uprising or
Yihetuan, accept Righteous
Harmony Movement before
"Righteous"; accept Society
of Righteous and
Harmonious Fists before
mentioned]



Round 4 1st Section Toss-up Questions

Question #5: Miscellaneous – Industrial Arts

10 points

This material is not salt, but the Ancient Greek and Roman names for the Dead Sea stemmed from its abundance of this substance. In its most common application, the Hveem [veem] test is used to determine the maximum amount needed, and it is applied as the prime and tack coat. Used in the base of Japan lacquer, its mastic form has a higher binder content and is a popular waterproofing agent. The natural form of this substance is in the La Brea [BRAY-uh] Tar Pits. Name this black substance used in the manufacture of most roof shingles and to pave roads.

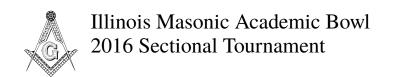
asphalt [accept bitumen;
prompt on tar or pavement]

Question #6: Science – Biology

10 points

This organ's cells contain intercalated	<u>heart</u>
[in-TER-kuh-lay-ted] discs and form a syncytium	muscl
[sin-"SITE"-ee-um]. The bundle of His [rhymes with	
"geese"] and Purkinje [pur-KIN-jee] fibers help provide	
conduction to this organ, relaying signals from the S.A.	
and A.V. nodes. This organ contains a pair of semilunar	
valves, as well as bicuspid and tricuspid valves. The	
vena cava [VEE-nuh KAY-vuh] leads into the right	
atrium of this organ. Its left ventricle [VEN-trih-kul] is	
the point of origin of the aorta [ay-OR-tuh]. Name this	
organ responsible for pumping blood throughout the	
body.	

heart [accept cardiac muscle]



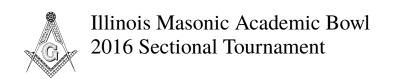
Question #7: Mathematics – Trigonometry

10 points per part

The	graph of the equation x squared plus y squared	
equa	als 1 is this specific shape.	
1	Name this figure used in trigonometry. The sine	unit circle [prompt on
	function gives the <i>y</i> -coordinate of where the	<u>circle</u>]
	terminal side of an angle in standard position	
	intersects this figure.	
2	This is the quadrant on the unit circle where the	<u>3</u> rd
	sine and cosine functions are both <i>negative</i> .	
3	The point on the unit circle corresponding to an	root 3 [or square root of 3
	angle of 240 degrees is located in the third quadrant.	or radical 3, do not accept
	Give the value of the tangent of 240 degrees.	"3", do not accept negative
		answers]
		_

Question #8: Mathematics – Trigonometry

In th	ne equation of a sine or cosine graph, this value	
appe	ears as a coefficient for the sine or cosine function.	
1	Name this quantity equal to half the vertical	amplitude
	distance between the highest and lowest points on a graph.	
2	This term can refer to the horizontal distance taken up by one cycle of a graph, making it synonymous with "wavelength". This term can also refer to the amount of time taken for one wave cycle.	period
3	Find the phase shift of the graph of y equals 2, plus 3 times the cosine of the quantity, 4 x minus 5, end quantity. Give the smallest possible positive answer.	5/4 [or 1.25 or $1 + 1/4$; accept additional information specifying that the shift is positive or to the right]



Question #9: Social Studies – Current Events

10 points per part

won	nis person's two Senate election campaigns, he the Democratic nomination, but declined the nination.	
1	Name this independent senator from Vermont.	(Bernard) Bernie Sanders
2	During his 2016 presidential campaign, Sanders has said that he would not form one of these independent organizations that can raise unlimited funds.	Super PACs [or super political action committees; do not prompt on "PAC(s)" or "political action committee(s)"]
3	On top of rejecting Super PAC [pak] funds, Sanders has also called for the reversal of the Supreme Court opinion in this case, which ruled that independent expenditures by corporations are protected speech under the First Amendment.	Citizens United v. FEC [or Citizens United v. Federal Election Commission]

Question #10: Social Studies – Current Events

Pope	e Francis visited the U.S. in September 2015.	
1	Name the Ohio Republican who resigned as	John Andrew Boehner
	Speaker of the House the day after the Pope's	[BAY-nur]
	speech to Congress.	
2	During his visit, Pope Francis canonized Junipero	<u>California</u>
	Serra [hoo-nee-PAIR-oh SAIR-ah] for his	
	missionary work in this former Spanish colony,	
	now a U.S. state.	
3	Paul Gosar, a Republican from this state, boycotted	<u>Arizona</u>
	the Pope's speech because of the Pope's position on	
	climate change. This state is currently led by Doug	
	Ducey, who succeeded Jan Brewer.	



Question #11: Literature – World Literature

10 points per part

This	s writer's stint as his country's ambassador to	
Indi	a inspired his poem "A Tale of Two Gardens".	
1	Name this writer who talked about the Tlatelolco [t'lah-tay-LOHL-koh] massacre in his "Post data" speech, which was added to later versions of his essay compilation <i>The Labyrinth of Solitude</i> .	Octavio <u>Paz</u> (Lozano)
2	The massacre occurred in this country, which Paz was from.	Mexico [or United Mexican States or Estados Unidos Mexicanos]
3	Paz's circular poem "Sun Stone" was inspired by the circular calendar of this civilization, which used to control what is now Mexico City.	Aztecs

Question #12: Literature – World Literature

At t	his play's conclusion, Dubois [doo-bwah] informs	
the 1	protagonist that he lost a suit.	
1	Name this drama in which the protagonist indicates his desire to leave "an abyss where vice is	The <u>Misanthrope</u> (, or the Cantankerous Lover) [or Le
	triumphant" and seek out a place where "one may enjoy the freedom of being an honest man".	Misanthrope (ou l'Atrabilaire amoureux)]
2	This author of <i>The Misanthrope</i> died onstage during a performance of his play <i>The Imaginary Invalid</i> .	Molière [or Jean-Baptiste Poquelin]
3	In <i>The Misanthrope</i> , Oronte's [aw-rahnt's] lawsuit against Alceste [al-sest] stemmed from the latter's insults directed at one of these 14-line poems written by Oronte.	sonnet s



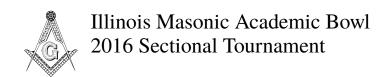
Question #13: Science – Physics

10 points per part

	of Amontons' [ah-man-taw'z] laws of this nomenon states that it is independent of the area of	
cont	•	
1	Name this force that opposes motion. In fluid mechanics, it is called drag.	<u>friction</u> (al force)
2	This friction, sometimes contrasted with kinetic friction, is the force that needs to be overcome to get an object to start moving.	static friction [or stiction]
3	This French scientist's research into static and kinetic friction led to his model of friction, which states that the force of friction is less than or equal to the coefficient of friction times the normal force.	Charles-Augustin de Coulomb [koo-lawmb]

Question #14: Science – Physics

This	s quantity equals about 1.34 for water.	
1	Name this quantity, the ratio of the speed of light in a vacuum to the speed of light in a particular medium. Light bends when it travels between media with different values for this quantity.	<pre>index of refraction [or refractive index; prompt on partial answers; prompt on n]</pre>
2	The index of refraction is multiplied by the sine of the angle of incidence in this formula, named for a Dutch scientist.	Snell's law [or Snellius' law]
3	In a medium with a high index of refraction, it may be easier to observe this effect, in which a charged particle moves faster than light in its medium, emitting bluish radiation analogous to a sonic boom.	Cherenkov ["CHAIR"-en-kawff] radiation



Round 4 3rd Section Toss-up Questions

Question #15: Social Studies – Geography

10 points

The Pay-Khoy are a northern extension of this mountain range. This range's western slopes are drained by the Pechora basin. Its Nether-Polar section features its tallest peaks, including Mount Narodnaya [nah-RODE-nie-yah], which is south of the Kara [KAH-rah] Sea and drains eastward to the Ob River. The southern end of this range is near the Aral Sea, though much of the waters from it drain into the Caspian Sea. This range extends southward into Kazakhstan, and it is primarily located in Russia. Name this mountain range that divides Europe from Asia.

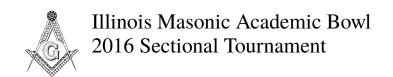
<u>Ural</u> Mountains or <u>Urals</u> [or <u>Uralsky</u> Khrebet]

Question #16: Literature – World Literature

10 points

In one poem, this author describes Guido Cavalcanti [GEE-doh kah-vahl-KAHN-tee] as "the first of my friends." The opening poem of that collection by this author describes it as a "book of memory". This author of *La Vita Nuova* wrote a collection in which the narrator encounters God in the Empyrean [em-PEER-ee-un], and passes through a gate with the inscription "Abandon all hope, ye who enter here." The narrator of that work is guided by Virgil and Beatrice. Name this author who described a journey from hell to purgatory and then heaven in *The Divine Comedy*.

Dante Alighieri [DAHN-tay ah-lee-gee-"AIR"-ee] [or Durante degli Alighieri; accept any underlined portion]



Round 4 3rd Section Toss-up Questions

Question #17: Fine Arts – Classical Music & Opera

10 points

Inspired by a revival of Jean-Philippe Rameau's [zhahn fih-leep rah-moh'z] music, this composer included an homage [AHM-uj] to Rameau after this composer's *Reflections in the Water* in his first set of *Images*. Another work by this composer was developed into a ballet by Vaslav Nijinsky and was based on a Stéphane Mallarmé [steh-fahn mah-lahr-may] poem. This composer also wrote a set of three symphonic sketches that included "Play of the Waves". Those pieces are *Prelude to the Afternoon of a Faun* and *La mer [lah mair]*. Name this French composer whose *Suite bergamasque [ber-ga-mask]* includes "Clair de lune [loon]".

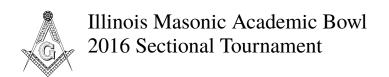
Claude(-Achille) **Debussy** [klohd deb-yoo-see]

Question #18: Science – Chemistry

10 points

The van 't Hoff [vawnt HAWFF] factor is the ratio of the actual and expected values of this quantity. Beer's law states that absorption is proportional to this quantity's product with path length and the extinction coefficient. Partial pressures can be used in place of this quantity when defining the equilibrium constant. Colligative [kah-LIG-uh-tiv] properties are proportional to a form of this quantity called molality [moh-LAAL-ih-tee]. Name this quantity describing how much of a compound has dissolved in a solution, which can be measured as molarity.

(molar) concentration [prompt on molality or molarity or molar before "molality"]



Round 4 3rd Section Toss-up Questions

Question #19: Social Studies – U.S. History

10 points

Herbert and Sue Hicks initially agreed to participate in this event, and H. G. Wells was approached as a leader for the opposing side by George Rappleyea [RAP-ul-yay]. Based on a text written by George William Hunter, H. L. Mencken called one person involved in this case a "Fundamentalist Pope". Brought on by a violation of the Butler Act, this event attracted national attention to Dayton, Tennessee. This event is the subject of the play *Inherit the Wind*, and it pitted Clarence Darrow against William Jennings Bryan. Name this trial about the teaching of evolution.

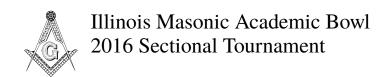
Scopes monkey trial [accept either underlined part; accept The State of Tennessee v. John Thomas Scopes]

Question #20: Literature – Mythology

10 points

This creature's saliva formed the poisonous aconite [AK-uh-"night"] plant. The third and final time the king of Tiryns [TIR-inz] leapt into a wine jar, it was upon seeing this beast. In the *Aeneid* [uh-NEE-id], the Cumaean Sibyl [kyoo-MAY-un SIB-ul] gave this creature a spiked cake. Hesiod [HEH-see-ahd] wrote of this creature having 50 heads, which may have counted the serpents in its mane. After charming Charon ["CARE-on"], Orpheus [OR-fee-us] was able to tame this monster. This creature guards the entrance to the underworld in Greek myth. Name this dog who is usually depicted with three heads.

Cerberus [accept Kerberos]



Question #21: Fine Arts – Art History

10 points per part

The	painter Daniele da Volterra tried to add clothing	
to th	is painting to cover figures' nakedness.	
1	Name this Michelangelo painting in which Jesus	The Last Judgment [or Il
	decides who rises and who falls.	Giudizio Universale]
2	This painter made a triptych [TRIP-tik] of <i>The Last</i>	Hieronymus Bosch [or
	Judgment. He also made the triptych The Garden	Jheronimus <u>van Aken</u>]
	of Earthly Delights.	
3	The Garden of Earthly Delights hangs in this major	Museo del Prado [or The
	art museum in Madrid.	Prado]

Question #22: Fine Arts – Art History

This	was the main style of painting and architecture in	
west	ern Europe during the 17th and early 18th	
cent	uries.	
1	Name this style dominant between the Mannerist	(early) baroque art
	and Rococo periods.	
2	This Flemish baroque painter created <i>The Elevation</i>	Peter Paul Rubens
	of the Cross and The Descent from the Cross.	
3	This Baroque artist designed the Cornaro Chapel	Gian Lorenzo Bernini [or
	and created the sculpture Ecstasy of Saint Teresa	Giovanni Lorenzo Bernini]
	for it.	



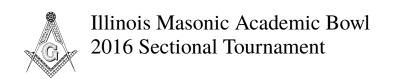
Question #23: Mathematics – Algebra

10 points per part

This	technique can be used to change a quadratic	
func	tion from standard form into vertex form.	
1	Name this process in which you add a constant so	completing the square
	that a quadratic expression becomes a perfect	[accept word forms such as
	square trinomial.	complete the square]
		26
2	What number should be added to x squared plus	<u>36</u>
	twelve x in order to complete the square?	
3	What is the only solution to the equation x squared	x = <u>-6</u>
	plus twelve x plus thirty-six equals zero?	

Question #24: Mathematics – Algebra

	graph of this function is half of a horizontal	
parabola.		
1	Name this function equivalent to raising a number to the one-half power.	(taking the) square root [accept variations like square rooting; prompt on radical]
2	Simplify the square root of 72 as much as possible, by taking as many powers as possible out of the radical.	6 root 2 [or 6 times the square root of 2 or 6 radical 2 or equivalents]
3	Find the square root of the quantity two raised to the tenth power. Give your answer without using any exponents.	32 [prompt on two to the fifth power]



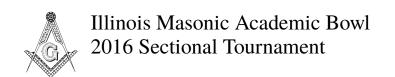
Question #25: Social Studies – U.S. History

10 points per part

In o	ne speech, this person described humanity	
"hanging from a cross of iron."		
1	Name this president whose farewell address warned	Dwight D(avid) ("Ike")
	about the expansion of the military-industrial	<u>Eisenhower</u>
	complex. He had been the Supreme Commander of	
	the Allied Forces during World War II.	
2	In consecutive presidential elections, Eisenhower	Adlai E(wing) Stevenson II
	defeated this "egghead". This person's grandfather	
	was Grover Cleveland's vice president.	
3	Near the end of Eisenhower's presidency, Gary	Lockheed <u>U2</u> [prompt on
	Powers was captured by the Soviet Union after	<u>Dragon Lady</u>]
	flying one of these spy planes for the CIA.	

Question #26: Social Studies – U.S. History

Dur	ing his Presidential campaign, this person	
pror	nised a "return to normalcy".	
1	Name this president whose advisers were	Warren G(amaliel) Harding
	nicknamed "the Ohio Gang". His short presidency	
	was tainted by the Teapot Dome scandal.	
2	This person was Harding's Secretary of Commerce.	Herbert (Clark) Hoover
	He led the U.S. Food Administration during World	
	War I and later ordered Douglas MacArthur to	
	move against the Bonus Army when he became	
	president.	
3	Teapot Dome, which was leased to oil companies	Wyoming
	that bribed Secretary of the Interior Albert Bacon	
	Fall, is in this state.	



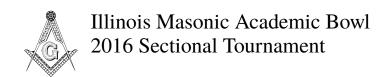
Question #27: Literature – British Literature

10 points per part

Henry Sweet was the inspiration for this fictional		
ling	uist.	
1	Name this phonetics professor who created a "Universal Alphabet" that was read by the author of	Professor Henry <u>Higgins</u> [prompt on <u>Henry</u>]
	"Spoken Sanskrit," Colonel Pickering.	[F
2	Henry Higgins wagered Colonel Pickering that he could get this Cockney girl to pass among nobility.	Eliza Doolittle [accept either]
3	This Irish playwright wrote about Henry Higgins' attempts to train Eliza Doolittle in <i>Pygmalion</i> . This playwright also wrote <i>Major Barbara</i> and <i>Saint Joan</i> .	George Bernard Shaw

Question #28: Literature – British Literature

One	sergeant compared the havoc wreaked by this	
man and the title character to the Battle of Golgotha		
[GA	HL-guh-thuh].	
1	Name this character who was told by a witch that	(Lord) Banquo
	he would not be a king, but would beget a line of	
	them. Three murderers do him in, but his son	
	Fleance [FLAY-unss] escaped the attack.	
2	Banquo's murder was ordered by this thane	<u>Macbeth</u>
	[rhymes with "train"], the title character of a	
	Shakespeare play. He also killed King Duncan, but	
	Macduff ended up taking this man's head.	
3	After Macbeth dies, this heir of Duncan becomes	Malcolm
	king. His forces approached Macbeth's castle using	
	plants from Birnam Wood as a disguise.	



Round 4 5th Section Toss-up Questions

Question #29: Science – Physics

10 points

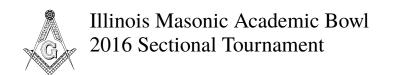
Three of these objects with known strengths can be	resistors [prompt on
used to find the strength of an unknown fourth one by	<u>resistance</u>]
assembling them into a Wheatstone bridge. Capacitors	
and these devices are usually labeled with colored	
bands to indicate their strength, which can be	
calculated as the voltage across them divided by the	
current passing through them. They are represented by	
a zig-zag on a circuit diagram. Name these circuit	
components that oppose the flow of current and that are	
governed by Ohm's law.	

Question #30: Social Studies – World History

10 points

The founder of Metaxim led a coup in this country that
established its "Third Civilization". King Constantine's
dismissal of this country's prime minister in the
Apostasy Crisis was followed by the Regime of the
Colonels. Ottoman troops murdered thousands of
revolting citizens here during the Chios [KEE-ohss]
Massacre. This country and Turkey were supported by
the Truman Doctrine. This country has recently been
headed by the Syriza [seer-EEZ-uh] Party's Alexis
Tsipras [SEE-pruss]. Name this European country
whose legislature is called the Hellenic [heh-LEH-nik]
Parliament, and which is governed from Athens.

Greece [before "Hellenic", accept Hellenic Republic or Ellas or Ellada or Elliniki Dhimokratia]



Round 4 5th Section Toss-up Questions

Question #31: Literature – U.S. Literature

10 points

In one story by this writer, men are only allowed to think about women during the Time of Mating, and people's jobs are selected by the Council of Vocations. This author wrote of an unseen character that saw towers shining on the bottom of the ocean, and subsequently sank his ship. This author created a character who built a motor powered by atmospheric static electricity, John Galt. This founder of Objectivism wrote of textbook writer Ellsworth Toohey, who sought to undermine architect Howard Roark. Name this author of *Anthem*, *Atlas Shrugged*, and *The Fountainhead*.

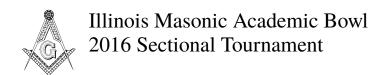
Ayn [rhymes with "mine"]
Rand [or Alisa Zinovyevna
Rosenbaum]

Question #32: Mathematics – Math Concepts

10 points

One example of this kind of shape is formed by extending lines drawn through adjacent points that trisect the sides of a quadrilateral, and is named for Ferdinand Wittenbauer. Similarly, connecting the adjacent midpoints of any quadrilateral produces one of these shapes. This is the most general quadrilateral whose diagonals divide it into congruent triangles. Its area can be found by treating adjacent sides as vectors and finding the magnitude of the cross product. If its sides are all equal in length, this shape is a rhombus. This shape's adjacent angles are supplementary. If its angles are right angles, this shape is a rectangle. Name this shape whose opposite sides are congruent and parallel.

parallelogram [prompt on
quadrilateral or
quadrangle before
"quadrilateral"]



Round 4 Extra Section Toss-up Questions

Extra Question #1: Fine Arts – Art History

10 points

A yellow arc goes around much of this painter's *Shimmering Substance*, which was created soon after he and his wife bought a barn on Long Island. What appears to be a black gash runs nearly top to bottom of this painter's mostly white work titled *The Deep*. One of his works got its nickname from eight blue lines running nearly top to bottom. That painting is known as either *Blue Poles* or *Number Eleven*, 1952. He was married to the artist Lee Krasner until he died from driving under the influence. Name this abstract expressionist famous for his drip paintings.

(Paul) Jackson <u>Pollock</u> [accept <u>Shimmering</u> <u>Substance</u> before "painter's"]

Extra Question #2: Social Studies – U.S. History

10 points

The Blount Report was commissioned after an uprising	<u>Hawaiʻi</u>
in this territory, while the Newlands Resolution allowed	
for its annexation. It was home to a colony founded by	
Father Demian [DAY-mee-un], and an attempt to do	
away with this state's Bayonet Constitution was	
followed by a coup [koo] led by Sanford Dole. It was a	
kingdom ruled by Kamekameha	
[kah-MAY-kah-MAY-hah] and Liliuokalani	
[LIL-ee-oo-oh-kuh-LAH-nee] before the U.S. annexed	
it. Barack Obama was born in this state. Name this	
state in the middle of the Pacific Ocean.	



Round 4 Extra Section Toss-up Questions

Extra Question #3: Mathematics – Math Concepts

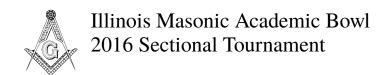
10 points

If the first two terms of a strictly monotone sequence	increasing [accept word
are five and ten, then the entire sequence must have this	forms]
property. If the first derivative of a function has this	
property, then the function is concave up. If a	
differentiable function has this property, then its first	
derivative is positive. If a function f has this property	
and A is less than B , then f of A must be less than f of B .	
An arithmetic sequence has this property if the	
common difference is positive. Name this property of	
functions or sequences whose graphs go upward.	

Extra Question #4: Science – Physics

10 points

Imperfections in these structures can be due to	crystals [prompt on lattices;
vacancies or occupation of interstitial	accept crystal lattices]
["inter"-STIH-shul] sites. The orientation of these	
structures can be described using Miller indices	
[IN-duh-sees]. These structures are formed in a	
purification method in which a compound is dissolved	
in solution, and then the solution is cooled. The pattern	
light makes after interacting with one of these	
structures can be modeled with Bragg's law. These	
structures are defined by a repeating unit cell. Name	
these lattice structures that consist of ordered	
arrangements of atoms, examples of which include	
quartz and diamond.	



Round 4 Extra Section Toss-up Questions

Extra Question #5: Literature – U.S. Literature

10 points

Among the locations seen by the speaker in this poem are a school where children "strove" at recess, and fields of grazing grain. After being passed by the setting sun in this poem, the speaker felt a chill on account of her tulle ["tool"] tippet and gossamer gown. At the end of this poem, the narrator surmises that the "horses' heads were toward eternity." The speaker of this poem had put away labor and leisure for the civility of the title figure, who was accompanied by immortality. Name this poem by Emily Dickinson in which a figure "stopped for her".

"Because I Could not Stop for Death" [accept answers mentioning 712]



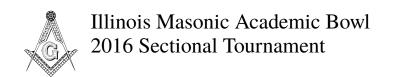
Extra Question #6: Science - Biology

10 points per part

This	reactive oxygen species in the body is broken	
down by catalase [KAA-tuh-"lace"].		
1	Name this cation ["cat-eye-on"] whose formula is	peroxide [accept hydrogen
	O_2^{2-} ["O two, two minus"], and which is also	peroxide]
	found in the compound H ₂ O ₂ ["H two O two"].	
2	Another reactive oxygen species is this ion with	<u>superoxide</u>
	formula O_2^{1-} ["O two, one minus"], which is	
	broken down by a namesake dismutase	
	[dis-myoo-TASE] into peroxide and oxygen.	
3	A mutation in the superoxide dismutase gene	amyotrophic lateral
	SOD1 [sahd "one"] is common in patients with this	sclerosis [or ALS; or Lou
	neuron-killing disease sometimes named for a	Gehrig 's disease]
	baseball player.	

Extra Question #7: Science – Biology

	teins enter this organelle through the "TOM" and M" complexes.	
1	Name this organelle, famously described "the powerhouse of the cell".	mitochondrion [or mitochondria]
2	Lynn Margulis proposed this theory that suggests the mitochondrion originated as a separate microbe ["MIKE-robe"] that was "swallowed" by another cell.	endosymbiotic [EN-doh-SIM-by-AH-tik] theory or endosymbiosis [EN-doh-SIM-by-OH-sis] [or symbiogenesis]
3	The endosymbiotic theory is supported by the fact that the mitochondria has its own genome, which is passed down through these people.	mothers [accept matrilineally or maternally or similar variations; accept females or women]



Extra Question #8: Literature – U.S. Literature

10 points per part

The central figure of this poem cannot hear the bugle		
trills or see the bouquets and ribbon wreaths, for he		
has "fallen cold and dead".		
1	Name this poem whose speaker walks "with	"O Captain! My Captain!"
	mournful tread" even though "the prize we sought	
	was won."	
2	"O Captain! My Captain!" was published in later	Walt(er) Whitman
	editions of this poet's collection Leaves of Grass.	
3	This Whitman poem, another elegy to Abraham	"When Lilacs Last in the
	Lincoln, features a gray-brown bird singing a carol	Dooryard Bloom'd"
	that describes death as "lovely and soothing".	

Extra Question #9: Literature – U.S. Literature

It may "stink like rotten meat / or crust and sugar over		
— like a syrupy sweet".		
1	Name this abstract concept, the subject of the poem	a dream deferred [prompt
	"Harlem", which might "just sag, like a heavy	on <u>dream</u>]
	load".	
2	This author of "Harlem" described bodies of water	(James Mercer) Langston
	"ancient as the world and older than the flow of	Hughes
	blood in human veins" in the poem "The Negro	
	Speaks of Rivers."	
3	The opening stanza of "Harlem" inquires as to	a raisin in the sun
	whether a dream deferred dries up like this object.	
	Lorraine Hansberry titled her drama about the	
	Younger family after this item.	