

### Round 1 1st Section Toss-up Questions

#### **Question #1: Social Studies – World History**

10 points

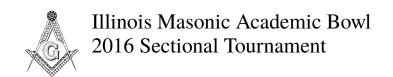
British forts in what is now this country were targeted	<u>Canada</u>
by the Fenian [FEE-nee-un] Raids. The transfer of	
Rupert's Land to this country sparked the Red River	
Rebellion, which ended when Louis Riel [loo-ee ree-el]	
left. During this nation's October Crisis in 1970, the	
FLQ attempted to get the French-speaking part of this	
country to secede. This modern country includes most	
of the regions explored by Jacques Cartier [zhahk	
kar-tee-ay] and Samuel de Champlain. Name this	
country whose past prime ministers include John	
Macdonald, Pierre Trudeau, and Stephen Harper.	

#### **Question #2: Mathematics – Math Concepts**

10 points

The repeated subtraction of this type of function from the reciprocal function is used to approximate the Euler [OY-ler]-Mascheroni constant. This function was used to develop Kepler's Third Law and design slide rules. The value of this function's derivative varies inversely with its input, an example of which is that for one of this type of function, the derivative is 1 over x. This function allows multiplication problems to be converted into addition problems. Name this inverse of exponential functions, whose "common" form is called base 10 and whose "natural" form is base e.

(natural or common)
logarithms or log(arithmic)
functions [accept answers
that additionally include
"natural" or "common" or a
base]



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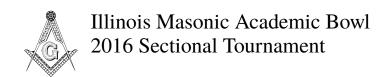
## **Question #3: Fine Arts – Classical Music & Opera**

10 points

One character in this opera says "It is a mismatch to	<u>Carmen</u>
take a soldier when one could have an officer." The title	
character of this opera sings about visiting Lillas Pastia	
[LIL-las PAHS-tyah] and dancing the Seguedilla	
[say-gway-DEE-yah]. This opera begins with Corporal	
Morales and some soldiers relaxing in a square when	
they are approached by Micaela, who is looking for	
Don José [dohn zhoh-say]. Soon after that, the women	
who work in a cigarette factory get off of work. This	
opera includes the "Toreador Song" and "Habanera	
[ah-bah-NAIR-ah]". Name this opera about a gypsy	
woman, composed by Georges Bizet [jorj bee-zay].	

#### **Question #4: Literature – U.S. Literature**

This author wrote of visiting Pio Baroja [PEE-oh	Ernest (Miller) <b>Hemingway</b>
bah-ROH-hah], whom this writer felt was more	
deserving of a Nobel Prize than himself. One of his	
novels, about smuggling Chinese workers into Florida,	
is To Have and Have Not. Robert Cohn's affair with	
Lady Brett Ashley served as the backdrop to one of his	
novels, and an 18-foot marlin secures the reputation of	
the fisherman Santiago in another of his works. Name	
this author of Death in the Afternoon, The Sun Also	
Rises, and "The Old Man and the Sea."	



## Round 1 1st Section Toss-up Questions

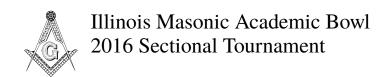
# **Question #5: Science – Chemistry**

10 points

Chlorine is added to this compound to create an	<b>benzene</b> [prompt on $C_6H_6$
insecticide called lindane [LIN-dayn]. Pyrene	before the end]
["PIE"-reen] and anthrocene ["AN-throw-seen"] are	
larger derivatives of this compound. This compound is	
the most famous compound that both is planar and	
satisfies Hückel's rule, which results in its great	
stability. Scientists were baffled by the structure of this	
molecule until August Kekulé's [KEK-oo-leh'z] dream	
of a snake eating its own tail led him to propose it	
having a cyclic structure. Name this most notable	
aromatic compound, whose formula is $C_6H_6$ .	

## **Question #6: Social Studies – Geography**

Two islands in this lake are named Manitou	Lake <u>Michigan</u>
[MAN-ih-too] after spirits in Algonquian	
[al-GAHN-kee-un] mythology. Cars are ferried across	
this body of water by the SS <i>Badger</i> , which travels	
between the towns of Ludington and Manitowoc	
[MAN-ih-tuh-wahk]. A town named Holland near this	
body of water celebrates an annual Tulip Time Festival.	
The Door Peninsula separates Green Bay from the main	
part of this lake. The Straits of Mackinac	
[MAAK-ih-naw] separate it from Lake Huron. Cities	
on the shore of this lake include Gary and Milwaukee.	
Name this Great Lake bordered by Wisconsin, Indiana,	
and Illinois.	



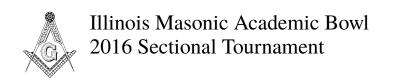
#### **Question #7: Mathematics – Statistics**

10 points per part

This	s type of diagram shows all the information from	
the 1	five-number summary of a data set.	
1	Name this kind of diagram that shows the minimum, maximum, and quartiles of a	boxplot [or box-and-whisker plot or
	distribution.	<b>box-and-whisker</b> diagram]
2	A segment drawn inside the box of a boxplot represents this value, also known as the second quartile. This value separates the higher half of a distribution from the lower half.	median [prompt on 50th percentile or fifth decile]
3	Find the interquartile range for a distribution with a minimum of 10, a first quartile of 12, a median of 15, a third quartile of 20, and a maximum value of 23.	<u>8</u>

#### **Question #8: Mathematics – Statistics**

This	two-word phrase is sometimes used to claim that	
diffe	erences between values are due to random errors.	
1	Name this type of statement that is tested in	null hypothesis
	statistical experiments. This statement is falsely	
	rejected in a type I [1] error.	
2	This is the name for a subgroup of a population	<u>sample</u>
	measured in a statistical experiment. One way of	
	calculating the standard deviation is named for this	
	term; the other type is the population standard	
	deviation.	
3	If an experiment with a 7% chance of success was	<u>35</u>
	tried 500 times, what would be the expected	
	number of successes?	



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

10 points per part

	s character used a lasso to defeat Sagramore	
[SA	G-ruh-mor] in a duel to the death.	
1	Name this character who is stabbed by  Meliagraunce [MEL-ee-uh-grawnss] and is the target of a spell causing him to sleep for 1,300 years.	Hank Morgan [accept either; prompt on The Boss; prompt on, but do not otherwise reveal, The Connecticut Yankee]
2	Hank Morgan travels from 19th-century America to medieval times in this novel.	A Connecticut Yankee in King Arthur's Court [or A Yankee in King Arthur's Court or A Yankee at the Court of King Arthur]
3	This satirist wrote A Connecticut Yankee in King Arthur's Court. He also wrote The Adventures of Tom Sawyer.	Mark <u>Twain</u> [or Samuel (Langhorne) <u>Clemens</u> ]

## **Question #10: Literature – U.S. Literature**

	resident of West Egg was shot after taking the	
blan	ne for something Daisy Buchanan had done.	
1	Name this graduate of St. Olaf's, whom George	Jay Gatsby [accept either;
	Wilson killed for supposedly running over George's	accept <b>Gatz</b> , <b>Jimmy</b> , or The
	wife Myrtle.	Great Gatsby]
2	Jay Gatsby appears in <i>The Great Gatsby</i> , which is	F(rancis) Scott (Key)
	by this author.	<u>Fitzgerald</u>
3	Henry Gatz and Owl Eyes were among the few	Jay Gatsby's <b>funeral</b> [accept
	attendees of this event. When Klipspringer was	similar answers referencing a
	invited to this event, he asked about tennis shoes.	<b>funeral</b> or <b>memorial</b> ]



# **Question #11: Science – Biology**

10 points per part

The	se diagrams use the alleles [uh-LEELS] of parents	
to d	epict the possible genotypes ["gene-oh-types"] of	
offs	pring.	
1	Name these "squares". They show a 3-to-1	Punnett squares
	phenotype [FEE-noh-"type"] ratio when crossing a	
	pair of heterozygous [HET-uh-roh-ZY-gus] parents.	
2	Punnett squares are used to analyze the types of	Gregor Mendel [accept
	inheritance patterns named for this man, an	Mendelian inheritance or
	Austrian monk who studied pea plants.	Mendelian genetics]
3	Punnett squares are especially used for this method of determining whether an organism is	test cross(ing)
	homozygous or heterozygous, in which the	
	organism of unknown genotype is bred with a	
	homozygous recessive partner.	

## **Question #12: Science – Biology**

Cell	s in this kind of tissue contain an organelle called	
the s	sarcoplasmic reticulum [sar-koh-PLAS-mik	
reh-	TIK-yoo-lum].	
1	Name this type of tissue that contracts to allow	muscle tissue or muscles
	humans to move. It comes in skeletal, smooth, and	
	cardiac varieties.	
2	This is the functional unit of a muscle. It is	sarcomere
	composed of actin and myosin [MY-oh-sin].	
3	Sarcomeres do not contract until they encounter	calcium [or Ca; accept
	ions of this element, which stop troponin	$Ca^{2+}$
	[TROH-poh-nin] from blocking the binding of	
	actin and myosin. This element is found in the	
	sarcoplasmic reticulum.	



# **Question #13: Social Studies – Religion**

10 points per part

In th	nis person's namesake book in the Old Testament,	
Sata	n is told that he can touch everything this man has	
but	cannot take this man's life.	
1	Name this man who blesses God even when his	Job [rhymes with "lobe"] [or
	possessions and his family are destroyed.	<u>Iyov</u> ]
2	In the Septuagint [sep-TOO-uh-jint], this elder brother of Jacob was named as Job's grandfather. This person gave up his birthright to Jacob in exchange for a bowl of stew.	Esau [or Aysav]
3	In Chapter 14 verse 14 of his namesake book, this prophet indicated that Noah, Daniel, and Job could only save themselves when Jerusalem is judged.	Ezekiel [or Yechezkayl]

## **Question #14: Social Studies – Religion**

This	saint was arrested following his denunciation of	
the 1	elationship between Herod Antipas [AN-tuh-pus]	
and	Herodias [hur-AH-dee-us].	
1	Name this son of Zechariah [zek-uh-RY-uh] and	John the Baptist [prompt on
	Elizabeth who described Jesus as the "Lamb of	<u>John</u> ]
	God." He performed a ritual on Jesus Christ in the	
	River Jordan.	
2	This angel appeared to Zechariah in the temple to	Gabriel [accept Jibril]
	foretell the birth of John the Baptist. In Islam, this	
	angel narrated the Koran to Muhammad.	
3	With her mother's encouragement, this daughter of	Salome
	Herod Antipas demanded the head of John the	
	Baptist.	



## Round 1 3rd Section Toss-up Questions

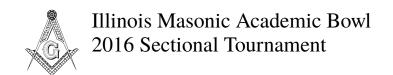
#### **Question #15: Miscellaneous – Consumer Education**

10 points

This company ended its relationship with Redington	<b>H</b> ewlett <b>P</b> ackard [or <b>HP</b>
Gulf following an SEC inquiry into illegal business	<b>Inc.</b> ; accept <b>H</b> ewlett <b>P</b> ackard
deals with Iran. Following the cancellation of a	Enterprise]
collaboration with Napster on a personal media player,	
this tech company made a deal with Apple allowing it	
to sell a line of iPods with its own logo on the back. It	
was founded during the Great Depression in a one-car	
garage in Palo Alto, and since its 2002 acquisition of	
Compaq it focused on the personal computing market.	
This company sells Stream, ENVY, and Pavilion	
laptops, and it split in 2015. Name this tech giant that	
in 1999 hired Carly Fiorina as CEO.	
	·

#### **Question #16: Literature – British Literature**

This poet invited readers to join him in singing the	William <u><b>Blake</b></u>
sweet chorus of "Ha ha he" in "Laughing Song". This	
poet wrote of an animal with "such a tender voice,	
making all the vales rejoice" in a poem in which God is	
told to bless that animal and the animal is asked "who	
made" it. That poem, "The Lamb", is in this writer's	
Songs of Innocence. In another of this writer's poems,	
the speaker asks, "What immortal hand or eye, could	
frame thy fearful symmetry?". Name this poet who	
wrote of an animal "burning bright in the forests of the	
night" in "The Tyger".	



#### Round 1 3rd Section Toss-up Questions

#### **Question #17: Science – Earth Science**

10 points

A member of the rose family called *Polylepis* ["poly"-LEP-iss] grows on these formations. These formations are typically the home of edelweiss [AY-dul-"vise"], which has a species name making the relationship explicit. These landforms are also the most common homes of vicugnas [vee-KOO-nyas] and chinchillas. The fault-block types of these objects can be found in Harz ["hearts"], Germany and, like the fold type, are formed by continental drift. These objects often form volcanoes. Name these very large objects that often collect in ranges such as the Great Dividing Range, the Andes, and the Himalayas.

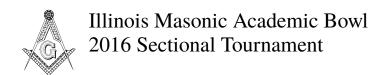
**mountains** [or **alpine**; accept mountain **range** before it is mentioned]

### **Question #18: Social Studies – U.S. History**

10 points

During this president's term in office, John Fries [frees]
led a rebellion against a property tax. Also during his
presidency, Congress ended treaties with France and
authorized attacks on French ships in what became
known as the Quasi-War. Those events occurred after
this president announced that French diplomats sought
bribes in the XYZ Affair, and they led to him backing
the Alien and Sedition Acts. Name this drafter of the
Massachusetts State Constitution, who was the first
vice president and second president.

John Adams [prompt on "Adams"]



### Round 1 3rd Section Toss-up Questions

#### Question #19: Literature – World Literature

10 points

On his way to Küsnacht [KOOS-nahkt], this character steered a boat to shore before putting his captors back out to sea. This person's murder of a tyrant, which happened after his victim showed Armgart no pity, led to the signal Ulrich [OOL-rik] of Rubenz was looking for to start a revolution. This person was captured after he did not salute the governor's cap, and he later killed that governor, Albrecht [AHL-brekt] Gessler. Name this Swiss archer who was given a chance to save his own life by shooting an apple off the head of his son.

William Tell [accept either; accept Wilhelm Tell or Guillaume Tell]

### **Question #20: Science – Biology**

10 points

In these cells, the release of calcium ions causes the cortical reaction. These cells are surrounded by a layer called the zona pellucida [ZOH-nuh peh-LOO-sih-duh]. The formation of these cells also results in the creation of three polar bodies. When these cells develop, the corpus luteum [LOO-tee-um] is formed. These cells, which are large enough to be seen with the naked eye, are stored in follicles until they are released into the Fallopian [fuh-LOH-pee-un] tubes. One of these cells is shed with the endometrium [EN-doh-MEE-tree-um] during menstruation. Name these female sex gametes that are fertilized by sperm cells.

egg cells [or ova or ovum or oocytes]



# **Question #21: Mathematics – Geometry**

10 points per part

This	s term refers to any line that intersects two other	
lines	s at distinct points.	
1	Name this line that creates congruent alternate	transversal line [accept
	interior angles when the two lines it intersects are	<u>transverse</u> line]
	parallel.	
2	If a transversal intersects two parallel lines, and one	143 degrees
	of the interior angles formed is 37 degrees, then	
	what is the degree measure of the interior angle	
	adjacent to that one? Consecutive interior angles	
	are not congruent in this case.	
3	Suppose transversal lines ABC and XYZ intersect	<b>9</b> units
	three parallel lines named AX, BY, and CZ. If	
	segment AB measures 4 units, BC measures 6 units,	
	and XY measures 6 units, then what is the length of	
	YZ?	

# **Question #22: Mathematics – Geometry**

This	s term can refer to a plane that touches a sphere at	
one	point.	
1	Name this term for two mathematical objects, such	tangent line [accept line of
	as a line and a curve, that touch at only one point.	<u>tangency</u> ]
2	If two circles, one with a radius of 3 units and the other with a radius of 4 units, are 3 units apart, then how far apart are their centers?	<u>10</u> units
3	In the situation above, find the length of a segment from a point of tangency on the circle of radius 3 units to the center of the circle of radius 4 units.	root 91 units [or the square root of 91 units or radical 91 units or equivalents, do not accept "91"]



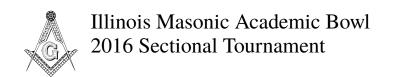
# **Question #23: Fine Arts – Art History**

10 points per part

His	birth name was Doménikos Theotokópoulos	
[dol	n-MEN-ee-kohss thay-oh-toh-KOH-puh-lohss].	
1	Give the common nickname for this painter of <i>The</i>	El <b>Greco</b>
	Nobleman with his Hand on his Chest and The	
	Burial of the Count of Orgaz.	
2	Most of El Greco's famous paintings such as View	(Kingdom of) <b>Spain</b> [or
	of Toledo [toh-LAY-doh] were made in this country.	Reino de <b>España</b> ]
	Salvador Dalí lived in Catalonia, which is currently	
	part of this country.	
3	Catalonia was also home to this artist of <i>The</i>	Joan <u>Miró</u> [zhoh-AHN
	Harlequin's Carnival and the sculpture The Caress	mee-ROH]
	of a Bird.	

## **Question #24: Fine Arts – Art History**

This	s artist painted <i>The Old Guitarist</i> during his Blue	
Peri	od.	
1	Name this painter of <i>Guernica</i> [gair-NEE-kah].	Pablo (Ruiz y) <b><u>Picasso</u></b>
2	Picasso played a leading role in the analytic, synthetic, and crystal phases of this art movement, in which objects were simultaneously shown from different viewpoints.	cubism [or cubist movement]
3	This painter used cubism in his portrait of Picasso, as well as in his pieces <i>Violin and Checkerboard</i> and <i>Harlequin with Guitar</i> .	Juan Gris [wahn "grease"] [or José Victoriano Carmelo Carlos González-Pérez]



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

10 points per part

This	s battle began with a surprise attack on Pittsburg	
Lan	ding, led by Albert Sidney Johnston and Pierre	
Bea	uregard.	
1	Name this battle won by Union forces after they	Battle of <b>Shiloh</b> [prompt on
	regrouped at the Hornet's Nest. Reinforcements led	Pittsburg Landing]
	by Don Carlos Buell [BYOO-ul] helped turn the	
	tide on the second day.	
2	The Battle of Shiloh and the Battle of Stones River	<u>Tennessee</u>
	near Murfreesboro were fought in this state.	
3	Following the Battle of Shiloh, calls for the	(Hiram) Ulysses S. <b>Grant</b>
	removal of this general were countered by President	
	Lincoln's assertion that "I can't spare this man; he	
	fights". This person later became commanding	
	general of the Union and the U.S. President.	

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

Nor	man Butler and Thomas Johnson refused to admit	
to their role in this man's assassination, while		
Taln	nadge Hayer confessed at trial.	
1	Name this person who founded Muslim Mosque,	Malcolm X [or El-Hajj
	Incorporated after leaving the Nation of Islam. His	Malik El-Shabazz; accept
	departure followed a 90-day silence that was	Malcolm <u>Little</u> ; prompt on
	ordered by the Nation of Islam's leader.	partial answer]
	TTI 00 1 11 X7	
2	The 90-day silence was a response to Malcolm X's	John F(itzgerald) Kennedy
	comment about "chickens coming home to roost so	[accept <b>JFK</b> ]
	soon", which is how he described the assassination	
	of this president in 1963.	
3	The Autobiography of Malcolm X was actually	Alex(ander Murray Palmer)
	written by this journalist, also the author of <i>Roots</i> .	<u>Haley</u>



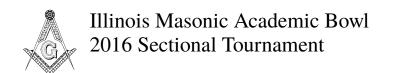
# **Question #27: Science – Chemistry**

10 points per part

A co	ommon introduction-to-chemistry experiment	
invo	lves using this technique to separate the pigments	
in in	ık.	
1	Name this technique that separates a compound	<b>chromatograph</b> y
	based on a mobile phase's affinity for a stationary	[kroh-muh-TAH-gruh-fee]
	phase.	[accept chromatogram]
2	Simple chromatography often uses this paper-based material, which is also commonly used when	filter paper [or filtration paper]
	funneling.	

# **Question #28: Science – Chemistry**

A fo	orm of this technique named for Karl Fischer can	
be u	sed to find the amount of water in a sample.	
1	Name this technique in which a substance of	titration ["tie-TRAY"-shun]
	known concentration is used to find the	[or <u>titrating</u> ]
	concentration of another substance. It is commonly	
	done with acids and bases.	
2	In an acid-base titration, one of these substances is	pH <u>indicator</u>
	typically added to determine visually when a pH	
	threshold is crossed. Probably the most common	
	one is phenolphthalein [fee-nawlf-THAY-leen].	
3	A titration is performed until this point, where the	equivalence point
	unknown and known substances have reacted in the	
	stoichiometrically [STOY-kee-oh-"METRIC"-lee]	
	same amount.	



## Round 1 5th Section Toss-up Questions

#### **Question #29: Literature – U.S. Literature**

10 points

This town was home to Major Andre's tree and Wiley's	Sleepy Hollow, New York
Swamp, and its schoolhouse was designed by Yost van	
Houton ["HOW"-tun]. It is about two miles from Tarry	
Town, and its plowboys occasionally hear a former	
resident chanting melancholy psalm tunes. One of the	
students who attends school in this town is Katrina Van	
Tassel. Its dominant spirit was said to be the ghost of a	
Hessian trooper. Name this location, once the home of	
Ichabod [IK-uh-bahd] Crane and the setting for a	
Washington Irving story about the Headless Horseman.	

# **Question #30: Mathematics – Math Concepts**

Two of these entities can be proven equal to each other	<u>set</u> s
using the axiom of extensionality. A group consists of	
an operation and one of these entities. Russell's	
paradox concerns one of these mathematical things that	
cannot exist. Taking the "power" of one of these results	
in one of them with more elements. The universal	
example of these entities contains everything, including	
itself. Two of these things can be combined using either	
union or intersection. Name these mathematical lists of	
elements, which are often written using curly brackets.	



## Round 1 5th Section Toss-up Questions

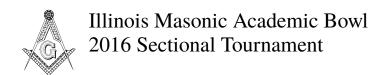
## **Question #31: Social Studies – World History**

10 points

When Caecilian [sih-SIL-yen] was appointed as the	Carthage [prompt on Tunis]
bishop in this city, Majorinus [MAY-jor-EE-nus]	
attempted to replace him during a conflict that led to	
the creation of the Donatist [DAHN-uh-tist] sect. This	
city's forces won the Battle of Lake Trasimene	
[TRAZ-ih-meen] but lost the Battle of Zama to forces	
led by Masinissa [MASS-uh-NIS-uh] and Scipio	
Africanus [SIP-ee-oh af-rih-KAN-us]. According to	
legend, the land for this city's citadel was claimed using	
oxhide strips. Name this city that lost the Punic	
[PYOO-nik] Wars against Rome and was led by	
Hannibal.	

## **Question #32: Science – Physics**

Wien's [veen'z] displacement constant divided by	wavelength [prompt on
temperature gives a value for this quantity. The cross	<u>length</u> or <u>distance</u> ]
section for Rayleigh [RA-lay] scattering is inversely	
proportional to the fourth power of this quantity.	
Planck's constant divided by momentum gives a	
version of this quantity that can describe any matter and	
is named for Louis de Broglie [loo-ee duh broy]. This	
value times frequency gives the phase speed of a wave.	
For visible light, it is between about 400 and 700	
nanometers. Name this quantity, the distance between	
successive crests of a wave.	



# Round 1 Extra Section Toss-up Questions

## Extra Question #1: Literature - British Literature

10 points

This character settled down with the daughter of Abdul	<u>Mowgli</u>
Gafur, who had tried to frame this man for the theft of	
Gisborne's money. Called "Frog" by one set of	
adoptive parents, this character was aided by Hathi	
[HAH-thee] in getting revenge on Buldeo	
[bul-DAY-oh], who had ordered the imprisonment of	
Messua [meh-SOO-uh]. At a Council Rock meeting led	
by Akela [uh-KEE-luh], this character was vouched for	
by the panther Bagheera [buh-GEER-uh] and the bear	
Baloo. After being hunted by the tiger Shere Khan, this	
boy is raised by wolves. Name this human protagonist	
of Rudyard Kipling's Jungle Book.	

## Extra Question #2: Science – Astronomy

Harlow Shapley argued that this location was the entire	Milky Way Galaxy [prompt
universe when he opposed Heber Curtis during the	on <b>galaxy</b> ]
Great Debate in 1920. The center of this object, which	
put out large flares detected in recent years by the	
Chandra X-ray Observatory, is the supermassive black	
hole Sagittarius A-star. This location's name is based	
on the appearance of a band of stars in the sky that	
belong to it. This location is between the Triangulum	
and Andromeda galaxies in size, making it the	
second-largest galaxy in the Local Group. Name this	
galaxy we live in.	



## Round 1 Extra Section Toss-up Questions

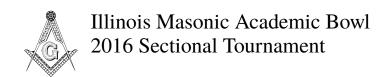
## Extra Question #3: Social Studies – U.S. History

10 points

David du Bose Gaillard ["GUY"-lard] designed the	Panama Canal
part of this project known as the Culebra	
[koo-LAY-brah] Cut. Philippe-Jean Bunau-Varilla	
[fih-leep zhahn boo-"NOW" vuh-RIL-lah] negotiated	
to allow for its construction to begin after a failed	
attempt to help Ferdinand de Lesseps. After Tomás	
Herran rejected a treaty regarding this project, ships	
were sent to gain independence from Colombia for its	
namesake nation. Name this waterway that connects	
the Atlantic and Pacific Oceans, and runs through a	
Central American country.	

## **Extra Question #4: Mathematics – Math Concepts**

This shape can be parametrized as $x$ equals $r$ times	(right circular) <b>cone</b>
cosine theta, $y$ equals $r$ times sine theta, and $z$ equals $r$ .	
This solid's surface area can be calculated using a	
hypotenuse from a right triangle formed from its two	
basic dimensions. Cutting off either a pyramid or this	
kind of shape produces a frustrum. A class of shapes	
including ellipses and parabolas is defined based on the	
intersection of a plane and this shape. This is one kind	
of shape whose volume equals one-third times the area	
of its base times its height. Name this solid that has a	
circular base.	



# Round 1 Extra Section Toss-up Questions

#### Extra Question #5: Fine Arts – Art History

10 points

A recent artist from this country, who traveled the world with his *Trash People*, is H.A. Schult. A member of the New Objectivity school from this country painted *Portrait of the Journalist Sylvia von Harden*. Another painter from this country often created landscapes with people facing into the painting, such as *Wanderer above the Sea of Fog*. A 16th-century engraver from this country made *Knight, Death, and the Devil*. Name this home of the Bauhaus, whose artists include Caspar David Friedrich and Albrecht Dürer.

Germany [or Federal Republic of Germany or Bundesrepublik Deutschland]



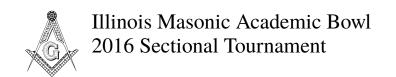
## Extra Question #6: Mathematics - Algebra

10 points per part

Alth	ough it is known that there are infinitely many of	
thes	e numbers, it is an open question whether there	
are i	infinitely many pairs of them that differ by two,	
whic	ch are called twins.	
1	Name these counting numbers greater than one that	<b>prime</b> numbers or <b>primes</b>
	are only divisible by one and themselves.	
2	This French woman is the namesake of prime	Sophie Germain
	numbers that satisfy the rule "twice the prime	[zhair-men]
	number plus one is also prime".	
3	This is the smallest prime number that is <i>not</i> a	7
	Germain prime, since twice this number plus one	
	can be factored into three times five.	

## Extra Question #7: Mathematics – Algebra

This	s kind of relation can be identified from its graph	
by v	whether it passes the vertical line test.	
1	Name these relations, in which each element of the	<b>function</b> s
	domain corresponds to exactly one element in the	
	range.	
2	The graph of a function may have this kind of point,	stationary points [accept
	where the derivative is zero. They are often, but not	<u>critical</u> points]
	always, local extrema.	
3	Find the <i>x</i> -coordinate of the stationary point of the	x=4 [accept (4, -13)]
	function $f$ of $x$ equals $x$ squared minus eight $x$ plus	•
	three.	



## Extra Question #8: Literature - British Literature

10 points per part

The	narrator of this poem "saw pale kings, and	
prin	ces too".	
1	Name this poem that describes a meeting in a	"La <b>Belle Dame Sans</b>
	dream between a knight-at-arms and a lady in the	Merci"
	meads. Its narrator wakes up on a cold hillside.	
2	This author of "La Belle Dame Sans Merci" wrote	John <u>Keats</u>
	"beauty is truth, truth beauty" in "Ode on a Grecian	
	Urn."	
3	In the knight's dream, he gave the lady four of	<b>kiss</b> es
	these before falling asleep. In "Sir Gawain and the	
	Green Knight," the carcasses of three hunted	
	animals are exchanged for three of these.	

#### Extra Question #9: Literature – British Literature

Nicl	knamed "Handel" by Herbert Pocket, this	
char	racter took a job in Cairo before eventually	
retu	rning to Satis [SAT-iss] House.	
1	Name this brother-in-law of Joe Gargery who aided	Philip Pirrip or Pip [accept
	the escaped convict Abel Magwitch. Magwitch	any underlined name]
	later became this character's benefactor.	
2	Pip is the protagonist of this Charles Dickens novel.	Great Expectations
3	After Pip's sister, Mrs. Joe, was attacked by Orlick,	a <b>hammer</b>
	she wrote the letter 'T' to represent this object that	
	Orlick used.	