

Round 7 1st Section Toss-up Questions

Question #1: Literature

10 points

One poem by this writer ends "O, rest ye, brother mariners, we will not wander more." This poet said of those mariners, "Branches they bore of that enchanted stem." This poet based that poem on both a trip to Spain and a group of people described in Homer's *Odyssey*. In another poem, this person said of a different group, "Theirs not to reason why, theirs but to do and die." This poet memorialized those people who rode "into the valley of Death". Name this English poet who wrote "The Lotos-Eaters" and was inspired by 600 soldiers during the Crimean War to write "The Charge of the Light Brigade".

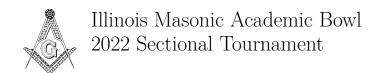
(Alfred,) Lord **Tennyson**

Question #2: Science

10 points

A star named after this person is orbited by the extra-solar planets Galileo, Brahe [BRAH-hee], Lipperhey [LIP-ur-hay], Janssen and Harriot. The principle named after this person states that people on Earth do not occupy a special place in the universe. Just before this person's death, he published *On the Revolutions of the Celestial Spheres*, which included a note saying the work was not physical truth. Galileo was convicted for supporting this person's work. Name this Polish astronomer who wrote that planets travel in circular orbits around the Sun.

Nicolaus <u>Copernicus</u>
[<u>kuh-PUR-nih-kuss</u>] [or
Mikołaj <u>Kopernik</u> or
Niclas <u>Koppernigk</u>]



Round 7 1st Section Toss-up Questions

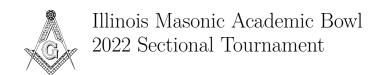
Question #3: Fine Arts

10 points

requiem masses orrequiems [prompt onmasses for the dead]

Question #4: Social Studies

About half of what is now this state was ceded to	<u>Mississippi</u>
the United States in the Treaty of Dancing Rabbit	
Creek by Choctaw Native Americans. The first	
African-American person to enroll in this state's	
flagship university, who would later survive being	
shot during a march, was James Meredith.	
Reactions against integration in this state led to	
the murder of Medgar Evers, and reactions against	
voter registration led to the murders of James	
Chaney, Andrew Goodman, and Michael Schwerner	
near the small town of Philadelphia. Name this	
state where the Battle of Vicksburg was fought.	



Round 7 1st Section **Toss-up Questions**

Question #5: Literature

10 points

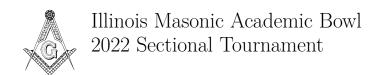
This woman and her husband were turned into	<u>Atalanta</u>
lions after profaning one of the gods. The sons of	
Thestios [THESS-tee-ohss], who were named Toxeus	
[TAHK-see-us] and Plexippus [PLEK-sih-puss],	
were killed after they took a prize from this woman,	
but Althaea [al-THEE-uh] then killed the man who	
killed them by burning a log. This woman killed	
Hylaeus ["hi"-LAY-us] and Rhoecus [ROY-kuss]	
when those two centaurs tried to attack her. Before	
Meleager [mel-ee-AY-gur] killed the Calydonian	
[kal-uh-DOH-nee-un] Boar, this woman injured it.	
As an infant, this woman was suckled by a bear.	
Name this woman who promised to marry any man	
who could beat her in a race, and who lost a race	
because she was distracted by three golden apples.	

Question #6: Science

10 points

In most mammals, this gland has three lobes, but in humans the intermediate lobe is just a layer of cells. This gland's lactotropic [lak-toh-TROH-pik] cells release prolactin ["pro-LACK-tin"]. Some hormones are released by this gland but not created in it, such as the ones that encourage uterus contractions and increase blood pressure, which are oxytocin [ahk-see-TOH-sin] and vasopressin [vay-soh-PRESS-in]. This gland's somatotropic [soh-MAT-oh-TROH-pik] cells release growth hormone in response to signals from the hypothalamus ["hype"-oh-THAL-uh-muss]. Name this gland below the hypothalamus and in front of the pineal [py-NEE-ull] gland, near the brain.

pituitary [pih-TOO-ih-tair-ee] gland [or **hypophysis**]



Question #7: Social Studies

10 points per part

This	s church is sometimes called the Egyptian	
Ort	hodox Church.	
1	Name this Christian church headquartered in	Coptic Orthodox Church
	Alexandria, Egypt.	of Alexandria
2	The Coptic Church claims to have been	Mark
	founded by this apostle who wrote the second	
	gospel in the New Testament.	
3	The Coptic Church split from other Christian	Council of Chalcedon
	churches after this 451 CE council due to a	[KAL-sih-dahn]
	dispute over whether Jesus has one nature or	
	two natures.	

Question #8: Social Studies

The	Episcopal Churches in the United States and	
Scot	tland began as part of this church.	
1	Name this Protestant religion that started as	Anglican Church [accept
	the Church of England.	Anglican ism or Anglican
		Communion]
2	This position, also referred to as Primate of All	(Lord) Archbishop of
	England, is generally considered the highest	Canterbury [prompt on
	position in the Anglican Communion, though	partial answer]
	this position does not have legal authority over	
	member churches.	
3	Anglican leaders gather at this conference	Lambeth Conference
	approximately every 10 years. This conference	
	is named for the London borough between	
	Wandsworth and Southwark [SUTH-urk].	



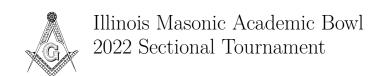
Question #9: Science

10 points per part

In t	his type of circuit, the power source supplies	
elec	tromotive force that forms a sine wave when	
grap	phed against time.	
1	Name this type of circuit contrasted with a	alternating-current
	direct current circuit.	circuit or AC circuit
2	Alternating current allows voltage to be	<u>transformer</u> s
	stepped up or down using one of these devices	
	that contains primary and secondary windings.	
3	The voltage in an alternating current circuit is	root-mean-square
	often calculated using this type of average. For	average or RMS average
	a sine wave, its result is the amplitude over the	
	square root of 2.	

Question #10: Science

The	e relativistic form of this effect uses the	
equa	ation square root of the entire quantity, the	
qua	ntity c plus v , end quantity, divided by the	
qua	ntity c minus v .	
1	Name this effect in which frequencies and	Doppler effect
	wavelengths change due to relative motion	
	between the source of a wave and the observer.	
2	Doppler red-shifts were used to find this value.	Hubble constant
	It represents the speed galaxies are moving	
	outwards divided by their distance from the	
	center of the universe.	
3	Objects moving away from us are red-shifted.	blueshift ed
	What similar term refers to the Doppler effect	
	on objects moving towards us?	



Question #11: Literature

10 points per part

This	s play includes both a logical argument as to	
whe	ther Socrates is a cat [pause] and a housewife	
anne	ouncing that her cat has been trampled.	
1	Name this play about an unusual epidemic. It	<i>Rhinoceros</i> [or
	begins with an argument between Bérenger	$egin{aligned} Rhinoc\'eros \end{aligned}$
	[bair-en-zhay] and Jean [zhahn], and it ends	
	with an argument between Bérenger and Daisy.	
2	This author wrote <i>Rhinoceros</i> as well as <i>The</i>	Eugène <u>Ionesco</u> [oo-zhen
	Bald Soprano.	<u>yawn-ess-koh</u>] [or Eugen
		<u>Ionescu</u>]
3	The Bald Soprano is set in the suburbs of this	London, England, United
	city.	Kingdom

Question #12: Literature

In t	his poem's section about Byblis [bub-LEESS]	
and	Caunus [KAW-nuss], it states "The gods have	
thei	r own laws."	
1	Name this Latin narrative poem, written in the	$\underline{Metamorphoses}$
	first decade after the birth of Jesus, that covers	
	from the time of Chaos before Earth's creation	
	until the death of Julius Caesar.	
2	This author wrote <i>Metamorphoses</i> as well as	(Publius) <u>Ovid</u> (ius Naso)
	Ars Amatoria.	[AH-vid]
3	James George Frazer translated this Ovid work	<i>Fasti</i> or <i>Fastorum Libri</i>
	whose title is sometimes given as The Book of	Sex
	Days or On the Roman Calendar. The part	
	describing the second half of the calendar was	
	either lost or never written.	



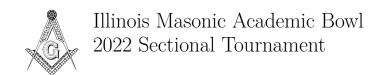
Question #13: Mathematics

10 points per part

Wh	en a fraction's denominator is a complex	
nun	aber, the fraction can be rationalized by	
mul	tiplying both the numerator and denominator	
by a	a number that has this relationship to the	
den	ominator.	
1	Give this term for a number that has the same	complex conjugate
	real component but opposite imaginary	[accept complex
	component as another number.	$\underline{\mathbf{conjugation}}$
2	A matrix is called Hermitian [air-MISH-un] if a	transposition or
	combination of conjugation and this other	transpose [or
	operation does not change the matrix.	$\underline{ ext{transposing}}$
3	Find the simplified result when 5 plus $2i$ is	<u>29</u>
	multiplied by its conjugate.	

Question #14: Mathematics

For	an ellipsoid, this quantity equals 4/3 times pi	
time	es the product of the three radii	
[RA	Y-dee-"eye"].	
1	Name this quantity that for a rectangular prism	<u>volume</u>
	equals length times width times height.	
2	Name the type of product used to find the	(scalar) <u>triple</u> product
	volume of a parallelepiped	
	[par-uh-lel-uh-PIE-pid]. This product combines	
	a cross product and dot product.	
3	Find the volume of a sphere whose radius is	$36 \text{ (times) } \mathbf{pi} \text{ cubic units}$
	3 units, in terms of pi.	[do not accept or prompt
		on partial answers]



Round 7 3rd Section Toss-up Questions

Question #15: Miscellaneous

10 points

Susan Goldberg became the editor-in-chief of this magazine in 2014, and in 2018 she stated that its coverage has been racist. Steve McCurry took this magazine's June 1985 cover photograph showing a Pakistani girl with wide eyes. Though the print edition of this magazine is monthly, Liz Langley writes a "Weird Animal Question of the Week" column for it. This magazine shares its name with the large non-profit scientific and educational organization that oversees it. This magazine's cover has an iconic thick yellow border. Name this magazine known for its photographs from throughout the world.

National Geographic [prompt on Nat Geo]

Question #16: Social Studies

10 points

A failed assassination attempt against this person is portrayed in the book *The Day of the Jackal*. This politician resigned after a referendum to set up regional councils and reform his country's senate was voted down in 1969. As this person rose to power earlier, he was very critical of his former boss Philippe Pétain [peh-tan]. After a referendum supported the Évian Accords, this person granted independence to Algeria. This person's Appeal of 18 June was given from London to inspire French resistance. Name this politician who led the Free French Forces against Nazi Germany and later became the president of France.

Charles <u>de Gaulle</u> [sharl duh <u>"goal"</u>] [prompt on <u>Gaulle</u>]



Round 7 3rd Section Toss-up Questions

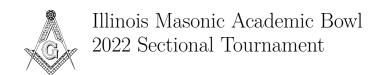
Question #17: Mathematics

10 points

For Taylor polynomials, this quantity is equivalent	$\underline{\mathbf{remainder}}(\mathbf{s})$
to error and can be estimated using expressions	
named for Lagrange [luh-grahnzh] or Cauchy	
[koh-shee]. Little Bézout's [beh-zoo'z] theorem,	
which is sometimes named for this quantity for	
polynomials, describes how to find this quantity by	
plugging a number into a polynomial. The modulo	
[MAH-yoo-loh] operation is equivalent to finding	
this quantity from division. When synthetic	
division is performed, this number is written in the	
lower right corner. Name this number that arises	
when the division of whole numbers does not give a	
whole-number answer.	

Question #18: Literature

One poem by this writer states "This is Number	Sylvia Plath
Three. What a trash, to annihilate each decade."	
This writer put those lines after stating: "I am only	
thirty. And like the cat, I have nine times to die."	
Another poem by this writer states "I have always	
been scared of you, with your Luftwaffe	
[LOOFT-vah-fuh], your gobbledygoo." A novel by	
this writer is about an intern at Ladies' Day	
magazine who goes through electroconvulsive	
therapy as treatment for depression. Name this	
poet of "Lady Lazarus" and "Daddy" who wrote	
about Esther Greenwood in <i>The Bell Jar</i> .	



Round 7 3rd Section Toss-up Questions

Question #19: Science

10 points

One rule for this process states that the gradient of chemical potential equals temperature times the gradient of the natural log of activity. That rule is the Maxwell—Stefan [STEH-fahn] rule. Other laws for this process say that accumulation is proportional to the second derivative of concentration with respect to length, and flux is proportional to the product of concentration times mass fraction. Those two rules were discovered by Adolf Fick. When this process involves the movement of a solvent such as water, it is called osmosis. Name this process, caused by molecular motion, that is a net flow of molecules from higher concentrations to lower concentrations.

diffusion [accept
diffusing; do not accept
"effusion"]

Question #20: Social Studies

10 points

This lake is the largest remnant of the Pamlico Sea.

This lake is just west of the historic site Big Mound City, which is in the J. W. Corbett Wildlife

Management Area near the DuPuis [doo-pwee]

Management Area. Some of the locations near this lake are named for the Mayaca and Belle Glade cultures that lived near it. This lake is fed by the Kissimmee River. One of the attempts to decrease flooding from this lake was the construction of the Saint Lucie Canal, which leads to the Gulf of Mexico. This lake is west of Palm Beach and at the north end of the Everglades. Name this large lake in Florida.

 $\begin{array}{c} \text{Lake } \underline{\text{Okeechobee}} \\ [\underline{\text{oh-kee-CHOH-bee}}] \end{array}$



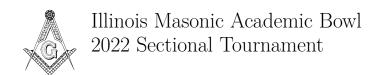
Question #21: Science

10 points per part

The	se compounds contain carbon and a 2-to-1	
ratio	o of hydrogen to oxygen.	
1	Name these compounds often found in foods,	<u>carb</u> ohydrates or <u>carb</u> s
	such as sugar, starch, and cellulose.	[prompt on saccharide s]
2	Cellulose combines with pectin to form this	<u>cell wall</u> s
	structure that exists in most living things but	
	not in animals.	
3	Though cellulose is usually produced in plants,	tunicates [accept
	it is also produced by these invertebrate	<u>Tunicata</u>]
	chordates ["CORE-dates"] that are sometimes	
	called sea squirts.	

Question #22: Science

Ider	ntify these human hormones:	
1	This hormone is the primary male sex hormone.	<u>testosterone</u>
	Men have about eight times as much of this	
	androgen hormone as women.	
2	This steroid hormone is released by the adrenal	$\underline{\operatorname{cortisol}}$
	[uh-DREE-null] gland during stress, and it	
	makes glucagon [GLOO-kuh-gahn] and	
	adrenaline more effective.	
3	This hormone, produced in the kidney	enkephalin(s)
	chromaffin ["CHROME-uh-fin"] cells, binds to	[en-KEFF-uh-lin]
	morphine receptors and is similar to	
	endorphins.	



Question #23: Fine Arts

10 points per part

Ans	wer the following about sculptures with	
myt	hological themes:	
1	This prominent sculpture in the Louvre [loov]	Winged <u>Victory</u> of
	depicts Nike but is missing the head.	Samothrace [prompt on
		Winged Nike of
		Samothrace or Winged
		$\underline{\textit{Victory}}$ or $\textit{Winged }\underline{\textit{Nike}}$
2	In the 1620s, this artist depicted a nymph	Gianlorenzo Bernini
	turning into a tree in the sculpture Apollo and	["John"-loh-REN-zoh
	Daphne.	bair-NEE-nee or
		Giovanni Lorenzo
		Bernini]
3	This ancient artist sculpted Hermes Bearing the	Praxiteles
	Infant Dionysus ["die"-oh-NY-suss], which is	[prak-SIT-uh-leez] of
	missing an arm.	Athens

Question #24: Fine Arts

Ans	wer the following about paintings that show	
app	les:	
1	This surrealist painter placed a green apple in	René (Francois Ghislain)
	front of a person's face in The Son of Man.	Magritte [ren-ay
		[mah-greet]
2	This French Post-Impressionist artist painted	Paul <u>Cézanne</u>
	The Basket of Apples, Still Life with Apples,	
	and The Plate of Apples.	
3	In The Three Graces, this artist had each grace	Raphael [or Raphaello
	hold an apple with one hand and put the other	Sanzio da Urbino or
	hand on the shoulder of another grace. Over	Raphael Santi ; accept any
	100 years later, Peter Paul Rubens painted the	underlined name]
	same subject without apples.	



Question #25: Literature

10 points per part

This	s play ends with the lines "Give me your hands,	
if w	e be friends, and Robin shall restore amends."	
1	Name this play by William Shakespeare in	A Midsummer Night's
	which Puck speaks after a group wedding that	\underline{Dream}
	includes Theseus and Hippolyta	
	[hih-PAH-lih-tuh].	
2	This character is the king of the fairies in A	Oberon [OH-bur-ahn]
	Midsummer Night's Dream.	
3	Finish the line spoken by Puck that begins	"Lord, what fools these
	"Lord, what fools"	mortals be!"

Question #26: Literature

This	s poem observes "What mighty contests rise	
fron	n trivial things."	
1	Name this poem about a "dire offense" by the	The Rape of the Lock
	Baron against Belinda.	
2	This satirist wrote The Rape of the Lock, The	Alexander <u>Pope</u>
	Dunciad ["DUNCE"-ee-ad], and An Essay on	
	Criticism.	
3	Finish the line from An Essay on Criticism	"For Fools rush in where
	that begins "For fools rush in"	Angels fear to tread."



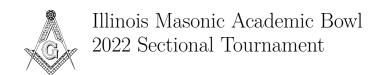
Question #27: Social Studies

10 points per part

The	ere were protests in this location from April 15	
to J	Tune 4, 1989.	
1	Name this location in Beijing where students	<u>Tiananmen</u> Square
	marched for a more open government.	
2	This Chinese leader, who was officially the	Deng Xiaoping [prompt
	chairman of the Central Military Commission	on $\mathbf{Xiaoping}$
	at the time, was criticized for his crackdown	
	against the protests. This person also replaced	
	Zhao Ziyang with Jiang Zemin [j'yahng	
	zuh-MIN] as General Secretary.	
3	In the middle of the protests, Deng met with	Mikhail Gorbachev
	this last major leader of the Soviet Union.	

Question #28: Social Studies

This	s battle was fought in Embabeh [em-BAH-bay]	
and	is named for objects that were visible on the	
hori	zon during the fighting.	
1	Name this 1798 victory in Egypt by Napoleon.	Battle of the Pyramids
2	At the Battle of the Pyramids, the French	Mamluks
	defeated a remnant of this 13th- through	
	16th-century sultanate that came from slave	
	soldiers.	
3	One month later, Horatio Nelson won this	Battle of the Nile
	major victory over the French at Aboukir	
	[ah-BOO-kir] Bay on the coast of Egypt.	



Round 7 5th Section Toss-up Questions

Question #29: Mathematics

10 points

This function gives the position of where a ray from the origin intersects the line "y equals 1". The range of the inverse of this function is the open interval from zero to pi. This function equals the derivative of the natural log of the sine function. The derivative of this function is the opposite of the square of the co-secant function, so this function decreases over its entire domain. Adding 1 to the square of this function gives the square of the co-secant function. On the unit circle, this function equals x over y. Name this function that, for an acute angle in a right triangle, equals the adjacent side length over the opposite side length.

co·**t**angent [accept answers that additionally mention a variable; do not prompt on "tan" or "tangent"]

Question #30: Literature

10 points

In response to another character mentioning respect after saying "I never boast, and I never tell lies", this character says "Respect was invented to cover the empty place where love should be." After that argument with her lover, this character visits her brother Stiva's [STEE-vuh'z] wife, Dolly. This character becomes distraught when she receives a telegram from Vronsky saying that he cannot return to her quickly. This woman is the title character of a novel that states "All happy families resemble one another; each unhappy family is unhappy in its own way." Name this woman who throws herself in front of a train in a novel by Leo Tolstoy.

Anna Karenina [accept either]



Round 7 5th Section Toss-up Questions

Question #31: Science

10 points

The carriers of this force are represented by a	strong nuclear force or
3-by-3 matrix of complex numbers with 10	strong interaction
conditions on it, which explains why there are eight	
types of this force. The carrier of this force is	
affected by this force, and as a result, at very small	
distances this force increases with distance. The	
lack of effect of this force at extremely small	
distances is asymptotic ["ass-imp"-TAH-tik]	
freedom. This fundamental force is described in the	
theory of quantum chromodynamics	
["CHROME-oh-dynamics"], and it is carried by	
gluons ["glue-ons"]. Name this fundamental force	
that binds quarks together to form hadrons	
[HAY-drahnz], and which binds protons and	
neutrons together to form an atomic nucleus.	

Question #32: Social Studies

When this person became U.S. Secretary of State,	William Jennings Bryan
he worked out treaties with 29 countries to refer	
disputes to the Permanent International	
Commission. This person was Woodrow Wilson's	
first secretary of State, but he resigned after the	
Lusitania [loo-suh-TAY-nee-uh] was sunk because	
he wanted the U.S. to remain neutral. Just before	
he died, this person tried to uphold Tennessee's	
Butler Act by arguing a case against John Scopes,	
who was represented by Clarence Darrow. This	
person was the Democratic presidential nominee in	
1896, 1900, and 1908. Name this politician and	
orator who delivered the Cross of Gold speech.	



Round 7 Extra Section Toss-up Questions

Extra Question #1: Fine Arts

10 points

This artist made two paintings with the same title, one now in Milan that shows Jesus pointing with his right hand and another now in London with an open right hand. Both of those paintings depict Jesus identifying himself to two disciples after his death. Another painting by this artist depicts Jesus pointing at a man in a customs house who is about to become a disciple. That painting in the Contarelli [kohn-tah-RELL-lee] Chapel is part of a series of paintings that this person made of that disciple. Name this Italian painter of Supper at Emmaus [eh-MAY-uss] and The Calling of Saint Matthew.

(Michelangelo Merisi da)
Caravaggio [accept either underlined name; do not accept or prompt on "Michelangelo"]

Extra Question #2: Science

10 points

In S.I. units, electric field strength is given in this unit per meter. To calculate the amount of energy that a capacitor can store in joules ["jewels"], multiply one-half times the number of farads times the square of a quantity that is measured in this unit. A measurement in this unit tells the number of joules required to move a coulomb [koo-lohm] of charge from one point to another. From that definition, it can be derived that this unit times amperes equals watts, which is a common formula for Joule heating. This unit is equivalent to amperes times ohms, and it is the most common unit of electric potential difference. Name this unit commonly used to measure the strength of a battery.

volts [do not accept "voltage"]



Round 7 Extra Section Toss-up Questions

Extra Question #3: Social Studies

10 points

This explorer used the ships <i>Half Moon</i> and	Henry Hudson
Discovery. The navigator Abacuk [AB-uh-kuk]	
Pricket kept notes about this explorer's journeys,	
including the end when a mutiny sent this man, his	
son, and a few other sailors out in an open boat	
because most of the crew wanted to return home.	
The mutiny occurred after the expedition got	
trapped in ice in what is now called James Bay. In	
1609, this explorer went along the coast of what is	
now Canada and the northern U.S., and in 1610,	
this explorer went across the Labrador Sea in the	
strait now named for him. Name this explorer who	
tried to find the Northwest Passage and is now the	
namesake of a river and a bay.	

Extra Question #4: Literature

This author wrote about Judith and Hetty Hutter,	James Fenimore <u>Cooper</u>
who learn that Floating Tom Hutter is not their	
father just before he dies. Floating Tom teamed up	
with Hurry Harry in a book by this author that	
describes attacks against the Mingos. In that book,	
this author wrote about the birth of Uncas, who	
was the son of Chingachgook [CHEEN-gach-gook].	
Several books by this author are set at the frontier	
in New York State and feature a character with	
several nicknames, including "Hawkeye". Name this	
author who wrote about Natty Bumppo in the	
Leatherstocking Tales, which include The	
Deerslayer and The Last of the Mohicans.	



Round 7 Extra Section Toss-up Questions

Extra Question #5: Mathematics

Vizing's ["VIE"-zeeng'z] theorem puts graphs into	<u>2</u>
this many classes. This number is the chromatic	
number of a graph whose edges correspond to the	
sides of a polygon with an even number of sides,	
which is one less than for a polygon with an odd	
number of sides. If multiplying a prime by this	
number and adding 1 gives another prime, then the	
original prime is a Germain [zhair-"main"] prime.	
The sum from zero to k of $1/2$ to the k power	
equals this number. Identify this number that is	
the only even prime.	



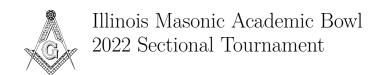
Extra Question #6: Science

10 points per part

Deu	terium [doo-TEER-ee-um] and tritium	
[TR	IH-tee-um] have this relationship to hydrogen.	
1	Give this general term for atoms that have the	<u>isotope</u> s
	same number of protons but different numbers	$[ext{"ICE"-oh-tohp} ext{s}]$
	of neutrons.	
2	This element can be turned into a super-fluid.	<u>helium</u> [accept <u>He</u>]
	One of its isotopes has two different superfluid	
	states, and another isotope has only one	
	superfluid state.	
3	The Girdler process to separate isotopes of	sulfide [do not accept
	hydrogen is named for this ion, which consists	"sulfite" or "sulfate"]
	of a sulfur atom with a 2-minus charge.	

Extra Question #7: Science

Thi	s quantity can be called amount concentration	
or s	ubstance concentration.	
1	Name this measure of concentration equal to	molarity or molar
	moles per liter.	concentration [do not
		accept "molality"]
2	This measure of equivalent concentration is	normality
	always an integer multiple of molarity.	
3	One way to calculate normality is to divide	1/3
	molarity by an equivalence factor that is less	
	than 1. Find the equivalence factor for	
	phosphoric acid.	



Extra Question #8: Social Studies

10 points per part

This	s person was the president during the	
Sep	tember 11 terrorist attacks.	
1	Name this president whose father was also	George (Walker) <u>Bush</u>
	president.	[accept <u>Bush</u> 43; accept
		the younger <u>Bush</u> or
		similar answers that
		specify his relative or
		absolute position]
2	Bush was criticized for his reaction to this	Hurricane Katrina
	hurricane that struck New Orleans in 2005.	
3	Near the end of Bush's presidency, the Great	Lehman Brothers
	Recession started after this financial services	(Holdings Inc.) [prompt on
	firm filed for bankruptcy. It was the largest	$\underline{\mathbf{Lehman}}$
	bankruptcy filing in U.S. history.	

Extra Question #9: Social Studies

This	s U.S. president gave a speech at the Berlin	
Wal	l during which he said "Tear down this wall!".	
1	Name this president who won the elections of	Ronald (Wilson) Reagan
	1980 and 1984 by wide margins.	
2	In 1986, President Reagan ordered the bombing	(State of) Libya or
	of this country. This country claimed that one	(Dawlat) <u>Libiya</u>
	of the people killed was the daughter of its	
	leader, Muammar Gaddafi [MOO-ah-mar	
	gah-DAH-fee].	
3	While in office, Reagan pushed for the	Strategic Defense
	development of this system—nicknamed "Star	Initiative or SDI
	Wars"—that would block nuclear missiles. It	
	was researched but never implemented.	