

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

## **Question #1: Science**

10 points

Back when radium paint was used to make	$\underline{\mathbf{zinc}}$ [accept $\underline{\mathbf{Zn}}$ before the
luminous watches, the sulfide of this element was	end]
typically used with the paint. An ion of this	
element is central to both carbonic anhydrase	
["an-HIDE-race"] and alcohol dehydrogenase	
[dee-"hi"-DRAH-juhn-"ace"]. This metal is in the	
calamine [KAL-uh-"mine"] mineral, which contains	
both its carbonate and its silicate [SILL-ih-"Kate"].	
The pyrithione [pir-ih-THY-ohn] of this element is	
used to treat skin conditions, including dandruff.	
To prevent the rusting of steel or iron, a coating of	
this element is applied, which is called galvanization.	
This element usually makes up about one-third of	
brass, with most of the rest being copper. Name	
this metal whose atomic symbol is "Zn".	

## **Question #2: Social Studies**

	10 points
When this person was 27 years old, he asked the	John (Forbes) <u>Kerry</u>
Senate Foreign Relations Committee "How do you	
ask a man to be the last man to die in Vietnam?	
How do you ask a man to be the last man to die for	
a mistake?". Many years later, this person's service	
in Vietnam was criticized by the group Swift Boat	
Veterans for Truth, who mocked his three Purple	
Hearts. As secretary of state, this person helped	
negotiate the Joint Comprehensive Plan of Action,	
which is commonly known as the Iran nuclear deal.	
Name this politician from Massachusetts who was	
the 2004 Democratic nominee for president and lost	
to George W. Bush.	



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

### **Question #3: Miscellaneous**

10 points

	· · <b>/</b> · · · · · ·
A so-called "speech" in a book by this writer says	Hunter S(tockton)
"There was no point in fighting on our side or theirs.	<b>Thompson</b>
We had all the momentum; we were riding the crest	
of a high and beautiful wave." That speech is in a	
book this person wrote after being assigned by	
Sports Illustrated to write captions for the Mint 400	
motorcycle race. This person received attention	
early in his career by writing the book <i>Hell's Angels</i>	
and the article "The Kentucky Derby Is Decadent	
and Depraved". Several works by this journalist	
include the words "fear and loathing" in their titles.	
Name this writer who developed the concept of	
gonzo journalism.	

### **Question #4: Literature**

		10 points
In this play, Francisco says "I saw him beat the	The <b><u>Tempest</u></b>	
surges under him, and ride upon their backs", but		
Alonso replies "No, no, he's gone." Alonso is the		
King of Naples in this play, and those lines refer to		
his son Ferdinand. In this play, Alonso's daughter		
Claribel had recently gotten married in Africa.		
Ferdinand is actually alive, and in this play, he falls		
in love with the daughter of the man who was the		
Duke of Milan before that title was taken away. In		
this play, the former duke's daughter, Miranda, falls		
in love with help from the spirit Ariel after		
witnessing a shipwreck. Name this play by William		
Shakespeare that is set on an island and features		
the sorcerer Prospero.		



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

### **Question #5: Science**

10 points

In 1799, one of these events was seen because Aimé	meteor showers [accept
Bonpland [eh-may "bone"-plahn] got a concussion	meteoroid $showers$ ]
while traveling with Alexander von Humboldt.	
These events are measured by their zenithal	
[ZEE-nuh-thul] hourly rate. The point that these	
events seem to come from is called the radiant, and	
with an altered suffix, these events are named for	
the constellation the radiant is located in. These	
events occur when Earth passes through the path of	
a comet. The Swift–Tuttle comet is responsible for	
one of these events that takes place in August,	
called the Perseids. Name these events during	
which a lot of so-called "shooting stars" can be seen.	

## **Question #6: Social Studies**

	10 points
John H. Flavell [fluh-VEL] helped popularize this	Jean (William Fritz)
scientist's work in the United States by developing	Piaget [zhahn
tests about the ability to distinguish between	pee-ah-zhay
appearance and reality. This scientist classified his	-
ideas as genetic epistemology	
[eh-PISS-teh-MAH-luh-jee], and he built on	
Immanuel Kant's schema [SKEE-muh] theory. This	
scientist showed that children have trouble	
understanding the conservation of volume of a	
liquid, and he demonstrated that infants treat	
hidden objects as though they no longer exist.	
Name this Swiss psychologist whose theory of	
cognitive development included the formal	
operational and sensorimotor ["sensory-motor"]	
stages.	



#### Round 1 2nd Section Teamwork Questions

### **Question #7: Mathematics**

10 points per part

In t	he decimal system, 10 has this role.	
1	Give this term for the number of distinct digits	base or radix
	in a number notation system. Its powers are	
	used to determine place values.	
2	What is the name of the base 16 system?	hexadecimal system
		$[\text{prompt on } \underline{\mathbf{hex}}]$
3	Convert the number "one zero three" from	259
	hexadecimal to decimal.	

#### **Question #8: Mathematics**

		10 points per part
This	s term describes shapes that are congruent	
exce	ept for scaling.	
1	Name this relationship between shapes in which	similar ity [or being
	lengths are proportional and angles are	<u>similar;</u> accept
	congruent.	<u>similar</u> ness]
2	This name is given to shapes that exhibit	<b>fractal</b> s
	self-similarity and have a fine structure so that	
	these shapes have the same level of complexity	
	at all scales.	
3	What is the fractal dimension of the Koch	logarithm base 3 of $4$
	["coke"] snowflake fractal?	[accept log 4 over log 3
		or <u>ln 4 / ln 3</u> or
		equivalents thereof,
		consulting with math
		experts if necessary]

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#### Round 1 2nd Section Teamwork Questions

## **Question #9: Literature**

10 points per part

The	protagonist of this novel gets advice from	
Prir	nce Korasoff on how to attract women.	
1	Name this French novel in which the protagonist uses the advice to get Mathilde	The <u><b>Red and</b></u> the <u><b>Black</b>(:</u> A Chronicle of the 19th
	[mah-tild] de la Mole to love him.	Century) [or Le <u>Rouge et</u>
		<u>le Noir</u> (: : Chronique de
		XIX. Siècle); accept $\underline{\mathbf{Red}}$
		and Black or Scarlet
		and Black
2	This author wrote <i>The Red and the Black</i> and	<b>Stendhal</b> [or Marie-Henri
	The Charterhouse of Parma.	Beyle]
3	The Charterhouse of Parma begins in this city.	Milan, Italy [accept
	Stendhal claims that residents of this city used	<u>Milano</u> , Italia]
	to be brave but are now more interested in	
	printing "sonnets on pink silk handkerchiefs."	

### **Question #10: Literature**

In t	his novel, Rosa the Beautiful is mistakenly	
pois	oned.	
1	Name this novel about Rosa's sister Clara del	The House of the
	Valle ["VIE"-ay].	<u>Spirits</u> [or La <u>casa de</u>
		<u>los espíritus</u> ]
2	This author wrote The House of the Spirits and	Isabel (Angélica) <u>Allende</u>
	City of the Beasts.	["eye"-EN-day] (Llona)
3	Clara's daughter loves Pedro Tercero but	France [or French
	marries a man from this country when she	Republic or République
	thinks Pedro is dead.	francaise]



#### Round 1 2nd Section Teamwork Questions

### **Question #11: Science**

10 points per part

Nat	ural killer cells and various T cells are part of	
this	body system.	
1	Name this system that protects from diseases.	immune system [accept
		<b><u>immunity</u></b> system]
<b>2</b>	These white blood cells, which develop in bone	$\underline{\mathbf{B}}$ cells [accept $\underline{\mathbf{B}}$
	marrow, produce antibodies.	lymphocytes]
3	These proteins inhibit virus replication. The	interferons
	gamma type of these proteins is released by	$[{f in-tur-FEER-ahn}_z]$
	natural killer cells and natural killer T cells.	$[\text{accept } \mathbf{IFN}s]$

## **Question #12: Science**

One	of these 20 compounds was first isolated from	
aspa	aragus, so it is called asparagine	
["uh	-SPARE-uh-jean"].	
1	Name these molecules that combine to form	<u>amino acid</u> s
	proteins.	
2	This type of covalent bond links amino acids in	$\mathbf{\underline{peptide}} $ bond(s) [prompt
	a protein.	on $\underline{\mathbf{amide}}$ bond(s)]
3	The simplest amino acid, glycine [GLY-seen], is	<b>porphyrin</b> s
	a precursor to this class of compounds with four	$[\underline{\mathbf{POR-fur-in}}z]$
	pyrrole [PEER-ohl] rings. Heme [heem] is one	
	of these compounds.	



#### Round 1 2nd Section Teamwork Questions

## **Question #13: Social Studies**

10 points per part

Ans	wer the following about laws designed to help	
won	nen:	
1	This numbered title within the Education	Title <u>9</u>
	Amendments of 1972 forbids discrimination in	
	institutions that receive government aid. This	
	title is often applied to funding for athletics.	
2	This law, passed in 1994, includes a rape shield	Violence Against
	law and help for people forced out of their	Women Act or VAWA
	homes due to stalking.	
3	This person is the namesake of a 2009 Fair Pay	Lilly (McDaniel)
	Act that extends the statute of limitations for	<b>Ledbetter</b> [accept either
	equal-pay lawsuits.	underlined name]

## **Question #14: Social Studies**

Thi	s Consitutional amendment states "The	
Cor	gress shall assemble at least once in every	
yea	r."	
1	Give the number of this so-called "lame duck	<b><u>20</u></b> th Amendment [accept
	amendment" that shortened the time period	Amendment $20$ ]
	between elections and inaugurations.	
<b>2</b>	The 20th Amendment established this date for	<b>January 20</b> th [or <b>20</b>
	presidential inaugurations.	January]
3	The 20th Amendment also established this date	January 3rd [or 3
	for beginning Congressional terms.	January]



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

#### **Question #15: Literature**

This creature lived in a bottomless body of water called the Alcyonian [al-see-OH-nee-un] Lake. While this creature was alive, humans had to cover their mouth and nose with cloth when approaching that lake because of the fumes. The blood of this creature was used to kill Nessus, which is why the Shirt of Nessus was poisonous. This creature was killed with the help of Iolaus ["eye"-oh-LAY-uss], who used fire to cauterize this creature's necks. This creature was killed as the second labor of Hercules. Name this creature that grew two new heads every time that one of its heads was chopped off.

### **Question #16: Mathematics**

	10 points
If this point is taken as a pedal point, then the	<b>focus</b> [accept <b>foci</b> or <b>focal</b>
pedal equation can be expressed as " $p$ squared	point]
equals a constant times $r$ . This point is the	
midpoint of the latus [LAT-uss] rectum. This point	
is at the pole in the equation " $r$ equals $e$ times $d$	
divided by the quantity 1 plus $e$ cosine theta". The	
distance from this point for any point on a shape is	
the numerator in a formula used to calculate	
eccentricity. An ellipse has two of these points, but	
the two points are in the same place in the special	
case of a circle. Name this point that is inside a	
parabola and is the same distance from the	
parabola vertex as the directrix is.	



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

### **Question #17: Social Studies**

		10 points
A siege of a city on this island started in 1648,	<u>Crete</u> [or <u>Kriti</u> ]	
lasted 21 years, and gained control of the city of		
Candia. This island was the site of the ancient city		
of Lato [LAH-toh], which was inhabited by the		
Dorians. A very early civilization on this island was		
devastated by a volcanic eruption to its north on		
the island of Thira [THEE-ruh], which is also		
known as Santorini. This island is the main site		
where the scripts Linear A and Linear B have been		
found. This island's palace of Knossos [NAH-sus]		
was unearthed by Arthur Evans, and it was built by		
the Minoan [mih-NOH-un] civilization. Name this		
island that is now the largest and most populous of		
the Greek islands.		

# **Question #18: Fine Arts**

	10 points
In one song by this composer, death behaves like a	Modest (Petrovich)
field marshal. That song comes after a song in	<u>Mussorgsky</u>
which death convinces a peasant to perform a	
trepak [truh-PAHK] dance in this composer's Songs	
and Dances of Death. Another piece by this	
composer begins with high-pitched strings and	
woodwinds followed by slow brass notes	
representing demons. That piece was one of the	
works by this composer that Nikolay	
Rimsky–Korsakov claimed to have corrected.	
Maurice Ravel [rah-vell] re-orchestrated this	
composer's piano suite inspired by paintings by	
Viktor Hartmann. Name this Russian composer of	
Pictures at an Exhibition and Night on Bald	
Mountain.	



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

### **Question #19: Science**

10 points

One material that takes advantage of this	(linear) <b>polarization</b>
phenomenon is polyvinyl alcohol plastic that has	[accept <b>polarize</b> d or
been doped with iodine. Because cordierite	polarizing
[KOR-dee-uh-"rite"] enhances this phenomenon, it	-
can be used to locate the Sun when the Sun is	
hidden. An angle used for this phenomenon equals	
the arctangent of the ratio of indices of refraction.	
This phenomenon exists when a transverse wave	
lacks rotational symmetry. Intensity is multiplied	
by the squared cosine of an angle to quantify this	
phenomenon in Malus's law. Name this	
phenomenon caused by reflection at Brewster's	
angle, in which a transverse wave vibrates in a	
single direction.	

## **Question #20: Literature**

	10 points
The subject of one poem by this writer is "He who,	William Cullen <u>Bryant</u>
from zone to zone, guides through the boundless	
sky thy certain flight, in the long way that I must	
tread alone, will lead my steps aright." In that	
poem, this writer said "There is a Power" which	
relates to both the writer and the bird he is	
addressing. A longer poem by this writer ends, "By	
an unfaltering trust, approach thy grave, like one	
who wraps the drapery of his couch about him, and	
lies down to pleasant dreams." That poem is this	
American poet's consideration of death. Name this	
19th-century poet who wrote "To a Waterfowl" and	
"Thanatopsis".	



### **Question #21: Social Studies**

10 points per part

This	s rebellion was considered put down with the	
1956	o capture of Dedan Kimathi [DEH-dun	
kee-	MAH-thee] and his subsequent execution,	
thou	igh its goals were mostly achieved a few years	
late	r.	
1	Name this response to British colonial rule over	Mau Mau rebellion [or
	Kenya.	Mau Mau uprising or
		$\underline{\mathbf{Mau}\ \mathbf{Mau}}$ revolt]
<b>2</b>	This person became the first prime minister	Jomo <u>Kenyatta</u>
	and then the first president of Kenya once it	
	gained independence. His son Uhuru became	
	president in 2013.	
3	This person was the president of Kenya from	Daniel (Toroitich) arap
	1978 to 2002. He banned opposition parties for	Moi [MOH-ee]
	several years before being pressured to allow	
	multi-party elections.	

# **Question #22: Social Studies**

10 points per part

This	s period of Russian history lasted from 1598 to	
1613	3.	
1	Name this violent time when several False	Time of <b><u>Troubles</u></b> [or
	Dmitries claimed to be the tsar.	<u>Smutnoe vremya</u> or
		<u>Smuta</u> ]
2	Feodor [FYOH-dur] I, who died childless in	<b><u>Rurik</u></b> id dynasty
	1598, was the last tsar of this dynasty that	
	controlled at least parts of Russia for 700 years.	
3	This brother-in-law of Feodor I ruled Russia	Boris (Fyodorovich)
	from 1598 to 1605. His son Feodor II was killed	Godunov
	two months after he died.	[GAH-duh-nawff]
		[prompt on <b>Boris</b> ]



#### Round 1 4th Section Teamwork Questions

### **Question #23: Science**

10 points per part

Glu	cose, fructose, and galactose [guh-LAK-tohss]	
are	these types of sugars.	
1	Give the one-word name for simple sugars.	monosaccharides
		[mah-noh-"SACK-uh-rides"]
2	Glucose, fructose, and galactose all have the	$\underline{six}$ carbon atoms
	same chemical formula. How many carbon	
	atoms are in one molecule of each of them?	
3	This type of monosaccharide has an end carbon	aldose
	double-bonded to an oxygen atom, as opposed	
	to the double bond being to a different carbon	
	atom in a ketose [KEE-tohss].	

## **Question #24: Science**

This	s process is often used after the Haber	
[HA	H-bur] process.	
1	Name this process that converts ammonia to	Ostwald process
	nitric [NY-trik] acid.	
<b>2</b>	This valuable metal is often used as a catalyst	<b>platinum</b> [accept $\underline{Pt}$ ]
	in the Ostwald process. This metal is also used	
	in catalytic converters in cars.	
3	This adjective is used to describe concentrated	(red) <b>fuming</b> nitric acid
	nitric acid that contains dissolved nitrogen	[prompt on <u>red</u> ]
	dioxide. The substance can be used as a rocket	
	propellant.	



### **Question #25: Literature**

10 points per part

In t	his poem, a creature named Errour is	
desc	ribed as "A monster vile, whom God and man	
does	s hate."	
1	Name this poem in which Arthur kills Orgoglio	The <b>Faerie Queene</b>
	[or-GOH-lee-oh] to help Una.	
<b>2</b>	This poet wrote The Faerie Queene.	Edmund <b>Spenser</b>
3	The Redcrosse Knight is captured by Orgoglio	<u>Duessa</u>
	because he is tricked by this woman, who is	
	described as "a false sorceress".	

## **Question #26: Literature**

One of William Shakespeare's best known sonnets		
is Sonnet 18, which begins, "Shall I compare thee		
to a summer's day?"		
1	Like all sonnets, how many lines does it have?	<u>14</u>
<b>2</b>	Give the adjective that finishes the second line.	temperate
	It begins "Thou art more lovely and more"	
3	Sonnet 102 refers to this mythological character	Philomel
	singing during summer. This character, who is	[ <b>FILL-uh-mell</b> ] [accept
	turned into a nightingale, is also referenced in	Philomela]
	Shakespeare's <i>Titus Andronicus</i> .	



#### Round 1 4th Section Teamwork Questions

### **Question #27: Fine Arts**

10 points per part

Some of the famous silkscreens of this actress were		
made shortly after her 1962 death and used a		
pub	licity photo from the movie Niagara.	
1	Name this famous actress who is shown 50	Marilyn <u>Monroe</u> [or
	times in the diptych [DIP-tik] named for her.	Norma Jeane Mortenson;
	The famous silkscreens of her from the 1960s	prompt on <u>Marilyn</u> ]
	are in a wide variety of colors.	
<b>2</b>	This artist created those silkscreens of Monroe.	Andy <b>Warhol</b> [or Andrew
	He also worked with a photographic assistant to	Warhola Jr.]
	create Self-Portrait in Drag.	-
3	Warhol also made several images of this food,	<b>banana</b> s [prompt on
	including the image on the cover of the album	<u>fruit</u> s]
	The Velvet Underground & Nico.	-

## **Question #28: Fine Arts**

pt on <u>strut</u> s]
ne
ningo Felipe
(i



#### Round 1 **5th Section Toss-up Questions**

### **Question #29: Science**

The uncinate [UN-sin-"ate"] process is a part of this pancreas organ that hooks around the superior mesenteric [meh-zen-TAIR-ik] artery. Some of the cells from this organ are called acinar [ASS-in-ur] cells because they look like grapes. This organ's so-called "juice" contains trypsinogen [trip-SIN-oh-jen] and several enzymes. The duct of Wirsung [VEER-zoong], which is sometimes named for this organ, connects it to the bile duct and through the major duodenal papilla [doo-oh-DEE-nul puh-PILL-uh] to the small intestine. Like the stomach and intestines, this organ has delta cells that secrete somatostatin [soh-MAT-oh-STAT-in]. Name this organ that secretes glucagon and insulin from its islets ["EYE"-lets] of Langerhans.

## **Question #30: Mathematics**

το ροπτο
definite <b>integration</b> or
definite $integral(s)$ [accept]
improper <b>integration</b> or
improper $integral(s)$ or
Riemann <b>integration</b> or
Riemann $integral(s)$ ]

10 points

10 noints



#### Round 1 5th Section Toss-up Questions

### **Question #31: Literature**

	10 points
One play by this writer begins with the title	<b>Euripides</b>
character inside her house crying and saying "I	[yoo-RIP-uh-deez]
can't stand this pain, this misery." At the same	
time, a nurse and tutor are talking outside the	
house with the title character's children. Another	
play by this writer begins with Athena and	
Poseidon talking about Ajax the Lesser. In that	
play, Andromache [an-DRAH-muh-kee] tells	
Hecuba [HEK-yoo-buh] about the death of	
Polyxena [pah-lee-ZEE-nuh]. Those plays are	
sometimes performed before and after this writer's	
play about Clytemnestra's [kly-tem-NESS-truh'z]	
daughter, <i>Electra</i> . Name this ancient Greek	
playwright who wrote The Trojan Women and	
Medea [meh-DEE-uh].	

## **Question #32: Social Studies**

	10 points
The decision in <i>Katzenbach v. Morgan</i> quoted this	<u>McCulloch</u> v. Maryland
case's opinion about government actions, saying	[prompt on Maryland]
"Let the end be legitimate." The unanimous	
decision in this case stated that the words	
"necessary and proper" should "be considered as	
synonymous". This case gave implied powers to the	
federal government. Referring to state actions, this	
case's decision stated "An unlimited power to tax	
involves, necessarily, a power to destroy." This	
case's named plaintiff was a cashier. Name this	
1819 case involving the operation of the Second	
Bank of the United States in Baltimore.	



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

## **Extra Question #1: Science**

#### 10 points

	10 ронна
One explanation of this phenomenon on the protein	<u>circadian</u> rhythms [accept
level is the transcription–translation feedback loop	<b><u>circadian</u></b> cycle or
discovered by Jeffrey Hall, Michael Young, and	<u>circadian</u> clock; prompt
Michael Rosbash in <i>Drosophila melanogaster</i>	on <u>diurnal</u> rhythms or
[druh-SAH-fih-luh meh-LAH-noh-GASS-tur]. The	answers mentioning $\underline{sleep}$
suprachiasmatic [SOO-pruh-ky-az-MAT-ik] nucleus	or <b>day</b> or <b>night</b> or <b>cycle</b> s
allows entrainment to control this phenomenon in	or <b><u>rhythm</u>s</b> ]
humans after receiving input from photo-sensitive	
ganglion ["GANG"-lee-un] cells. This phenomenon	
is regulated by melatonin [meh-luh-TOH-nin],	
which is why melatonin is sometimes used to treat	
insomnia. This phenomenon is the synchronization	
of organisms with the light–dark cycle. Name this	
phenomenon for biological cycles that repeat about	
every 24 hours.	

## **Extra Question #2: Fine Arts**

	10 points
When Paolo Veronese [vair-oh-NAY-zay] died in	<u><b>Tintoretto</b></u> [or Jacopo
1588, this painter was given the job of creating an	<u>Robusti</u> or Jacopo
enormous fresco for the Doge's [DOH-juh'z] Palace	<u>Comin</u> ]
in Venice, which this artist completed with his son	
Domenico. That work is <i>Il Paradiso</i> . This artist	
depicted Saint Mark descending to perform one of	
the posthumous miracles attributed to him in $The$	
Miracle of the Slave. Another painting by this	
artist takes a famous painting scene but gives much	
more attention to the servants and shows the scene	
at an angle rather than straight-on. Name this	
artist who, 100 years after Leonardo da Vinci,	
painted The Last Supper.	



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

## **Extra Question #3: Literature**

10 points

And rew Carnie wrote a book titled for being $A$	syntax
Generative Introduction to this subject, and Noam	
Chomsky wrote a book about Aspects of the Theory	
of this subject. This subject is sometimes	
contrasted with semantics, which is focused on	
meaning, while this subject is more focused on	
structure. Sometimes typos can confuse computer	
language compilers into thinking that there is a	
type of error named for this subject. While	
grammar consists of a wide set of structural rules,	
this subject concerns the order of words in a	
sentence. Name this set of rules for the way that	
linguistic elements are combined to form a subject.	
	1

### **Extra Question #4: Mathematics**

		10 points
The first example of these numbers is the only one	<b>perfect</b> numbers	
that does not end in a 1 when written in base 9,		
and it is also the only one of these numbers not		
divisible by a perfect square. The Euclid–Euler		
[YOOK-lid OY-lur] theorem states that all even		
examples of these numbers are equal to $1/2$ times		
the product of a Mersenne prime times 1 more than		
the Mersenne prime. If there are any odd examples		
of these numbers, then they have at least $1,500$		
digits. These numbers are neither deficient nor		
abundant. The first three examples of these		
numbers are 6, 28, and 496. Name these numbers		
that equal the sum of their proper positive factors.		



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

### **Extra Question #5: Social Studies**

	10 points
This dynasty established the Canghai	Han dynasty
[CHAHNG-"hi"] commandery when it controlled	
part of the Korean peninsula after the reigns of	
Wen and Jing. This dynasty sent Zhang Qian	
[CHEE-en] on diplomatic missions that can be	
considered the opening of the Silk Road. It is	
common for Chinese people to name the characters	
in their alphabet after this dynasty. An	
interregnum from this dynasty was eventually	
ended when Liu Xiu [lyoo shyoo] gained control	
from a leader supported by the Red Eyebrows in	
25 CE. Name this dynasty that ruled between the	
Qin [chin] dynasty and the Three Kingdoms.	



#### Round 1 Extra Section Teamwork Questions

### **Extra Question #6: Mathematics**

10 points per part

Two integration methods are named for this		
technique, one of which uses trigonometric		
func	ctions and the other of which often uses the	
lette	er $u$ as a variable.	
1	Name this technique. It can be used to solve	substitution [accept
	systems of equations by solving one equation	<b>substituting</b> or
	for one variable and using that result to replace	substitute; accept
	the variable in the other equation.	trigonometric
		substitution or
		u-substitution]
2	Solve for $x$ in the system " $y$ equals 2 $x$ plus 5	$x = \underline{6} \text{ (and } y \text{ equals } 17)$
	[pause] and 2 x plus y equals 29". You only	
	need to solve for $x$ .	
3	Evaluate the integral of $2 x$ times the cosine of	<u>0</u>
	the quantity x squared [pause] as x goes from 0	
	to the square root of pi.	

# **Extra Question #7: Mathematics**

		10 points per part
These points can be stationary points without		
being extrema.		
1	Name these points on the graph of a function at	<b>inflection</b> points [or
	which the concavity changes from positive to	points of <b>inflection</b> ;
	negative or vice versa.	prompt on $\underline{\mathbf{flex}}(es)$ ]
<b>2</b>	Find the <i>x</i> -coordinate of the inflection point of	$x = \underline{1/3}$
	the graph of " $y$ equals $x$ cubed minus	
	x squared". You only need to find the	
	x-coordinate.	
3	Find the <i>x</i> -coordinate of the inflection point of	$x = \mathbf{pi \ over \ 2}$ radians or $x$
	the graph of " $y$ equals the cotangent of $x$ ",	$= \underline{1/2 \text{ pi}}$ radians
	where $x$ is between zero and pi radians.	



#### Round 1 Extra Section Teamwork Questions

## **Extra Question #8: Social Studies**

10 points per part

Answer the following about anti-draft protests in		
the U.S.:		
1	This city was the site of a massive riot in 1863	<b><u>New York</u></b> City, New
	that turned into a race riot, including the	York [accept $\underline{NYC}$ ]
	looting of the Colored Orphan Asylum on Fifth	
	Avenue near 42nd Street.	
2	This woman and Alexander Berkman were	Emma <u>Goldman</u>
	sentenced to prison in 1917 for organizing the	
	No Conscription League. She was later	
	deported to her home country, Russia.	
3	In 1966, this person burned his draft card.	David Paul <b><u>O'Brien</u></b>
	Despite the First Amendment, the Supreme	
	Court upheld this person's conviction in 1968.	

## **Extra Question #9: Social Studies**

		re perne per part
The first version of this group started in Pulaski,		
Tennessee, on December 24, 1865.		
1	Name this organization that violently opposed	Ku Klux Klan [accept
	Reconstruction and supported white supremacy.	KKK]
2	This Confederate general was the first Grand	Nathan Bedford <b>Forrest</b>
	Wizard of the Ku Klux Klan. In 2021, his bust	
	was removed from the Tennessee state capitol.	
3	Forrest was criticized for a massacre of	Battle of <b>Fort Pillow</b>
	African–American soldiers just after this 1864	
	battle in Tennessee.	