



### Tossup 1: Literature — Literature

<p>In one short story by this man, the titular event brings trouble to Vladimir and Burmin, two possible suitors of Marya. His most famous play, in which the titular Russian tsar murders Dmitri and names his son Fyodor as his successor, was adapted to opera. In his only novel, the title character shoots his jealous friend Lensky through the heart in a duel and has a tumultuous relationship with Tatyana, who tells him that she will remain faithful to her husband. Identify this prolific Russian author of "The Blizzard", "The Queen of Spades", "Boris Godunov", and "Eugene Onegin".</p>	<p><b>Alexander <u>Pushkin</u></b></p>
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### Bonus 1: Fine Arts — Music

<p>Identify the following about less fortunate people in opera.</p>		
<p><b>A</b></p>	<p>Puccini composed this opera about Rodolfo, a poet; Schaunard, a musician; and Marcello, a painter, among others who were affected poverty and tuberculosis in the early 19th century.</p>	<p><b><u>La bohème</u></b></p>
<p><b>B</b></p>	<p>Bedřich Smetana composed this opera about an arranged marriage gone awry which ends with a bear escaping from a circus, which is actually Vašek in a costume.</p>	<p><b><u>The Bartered Bride</u></b> (accept <i>Prodaná nevěsta</i>)</p>
<p><b>C</b></p>	<p>This man composed Lady Macbeth of the Mtsensk District, an opera about a provincial merchant's wife who is not happy and cuckolds him with Sergei, a farmhand.</p>	<p><b>Dmitri <u>Shostakovich</u></b></p>
<p><b>D</b></p>	<p>In this one-act opera by Pietro Mascagni, Turiddu returns from the military to find that while he was gone, his fiancée, Lola, has married Alfio.</p>	<p><b><u>Cavalleria rusticana</u></b> (accept <i>Rustic Chivalry</i>)</p>



### Tossup 2: Math — Other (Computational: 30 Seconds)

Two events, A and B, are independent. Find the probability of A and B both occurring, if the probability that neither A nor B occurs is 10 percent and the probability that A and not B occurs is 30 percent.

**9/20** (accept 45 percent)

### Bonus 2: Social Studies — Geography

Identify these political entities that border Italy.

<b>A</b>	This country's city of Nice lies about ten miles west of its border with Italy's Piedmont region.	<b>France</b> (accept <b><u>French Republic</u></b> )
<b>B</b>	Trieste is near Italy's border with this country to the east, that lies across the Adriatic Sea from Italy.	Republic of <b><u>Slovenia</u></b>
<b>C</b>	The Matterhorn lies on the border between Italy and this mountainous country.	<b><u>Switzerland</u></b> (accept <b><u>Swiss Confederation</u></b> )
<b>D</b>	This enclave is the third-smallest state in Europe and is completely surrounded by Italy.	Republic of <b><u>San Marino</u></b>



### Tossup 3: Science — Biology

Discovered by Otto Funke, its alpha and beta chains are negatively impacted by thalassemia. It has a very strong affinity for carbon monoxide, and the fetal form is replaced by the "A" form when infants are about six months old. It contains a porphyrin ring with four nitrogen atoms in the center, which bind to an iron ion. Affected by sickle-cell anemia, name this protein which transports oxygen in the blood.	<b><u>Hemoglobin</u></b>
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### Bonus 3: Literature — Literature

Identify the following about the Harlem Renaissance.		
<b>A</b>	This man's Harlem (Dream Deferred) was the source for the title of A Raisin in the Sun.	<b>Langston <u>Hughes</u></b>
<b>B</b>	This man penned the poetry collection God's Trombones as well as The Autobiography of an Ex-Colored Man.	<b>James Weldon <u>Johnson</u></b>
<b>C</b>	This man published one of the earliest works of sociology in his collection of essays on race, The Souls of Black Folk.	<b>W.E.B. <u>Du Bois</u> (doo-BOYSS)</b>
<b>D</b>	This man's 1928 novel, Home to Harlem, drew criticism from the man in part C for its portrayals of black "licentiousness."	<b>Claude <u>McKay</u></b>



### Tossup 4: Social Studies — Current Events

<p>When he was elected to Comptroller in 1978, this man became the first black man in that state to be elected to a statewide office. Twelve years later he became that state's Attorney General, a post in which he served in until 1995. That year, he ran for mayor, but lost to Richard M. Daley, and in 2003 he lost to, among others, Rod Blagojevich for Illinois Governor. Name this man who, in December, was appointed to the senate seat vacated by Barack Obama.</p>	<p><b>Roland Wallace <u>Burris</u></b></p>
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### Bonus 4: Science — Physics

<p>Identify these principles from fluid dynamics.</p>		
<b>A</b>	<p>This number approximates the "randomness" of fluid flow, and is high for turbulent flow.</p>	<p><b><u>Reynolds</u> number</b></p>
<b>B</b>	<p>The opposite of turbulent flow is this, where fluids flow in parallel streams.</p>	<p><b><u>Laminar</u> flow</b></p>
<b>C</b>	<p>This namesake principle states that in enclosed incompressible fluids, pressure changes are conveyed throughout the entire fluid.</p>	<p><b><u>Pascal's</u> principle</b></p>
<b>D</b>	<p>This namesake principle and equation states that increasing the speed of fluid flow decreases its pressure.</p>	<p><b><u>Bernoulli's</u> principle</b></p>



### Tossup 5: Fine Arts — Music

<p>One setting of this opera is a lake of tears, while another is a large horde of treasure. The composer's only opera, it only has two singing characters appear on stage. Another setting is a window looking on a large garden and another is a blood filled torture chamber. After pleading with his new wife, Judith, to just love him she finally opens a seventh door, only to find the three former wives of her love draped in jewelry. Name this opera with seven doors taking place in the titular character's estate, an opera by Béla Bartók.</p>	<p><b>Duke <u>Bluebeard's Castle</u></b></p>
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### Bonus 5: Math — Calculus

<p>Find the area contained in the following figures.</p>		
<b>A</b>	r equals 5, from theta equals 0 to theta equals pi.	<b><u>25 pi / 2</u></b>
<b>B</b>	r equals cosine of two theta, from theta equals 0 to theta equals pi over 2.	<b><u>pi / 8</u></b>
<b>C</b>	x equals t squared, and y equals t, from t equals 0 to t equals 2.	<b><u>16/3</u></b>
<b>D</b>	x equals 2t, and y equals t squared, from t equals 0 to t equals 5.	<b><u>250/3</u></b>



### Tossup 6: Literature — Literature

<p>He squares off against Magua in his creator's most famous work, in which he does his best to keep the conflict between the Delaware Indians and the Hurons to a minimum. He relates with Chingachgook as his "brother", even though they share no blood relation. He earned the nickname La Longue Carabine using his trusty "one shot, one kill" mantra, and flintlock rifle Killdeer. A white man raised by Native Americans, identify this character who is known by the titular nicknames The Pathfinder, The Deerslayer as well as Leatherstocking.</p>	<p><b>Nathaniel "Natty" <u>Bumppo</u></b></p>
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### Bonus 6: Miscellaneous — Entertainment

<p>In 2004, Jake Slichter wrote a book called So You Wanna Be a Rock &amp; Roll Star.</p>		
<p><b>A</b></p>	<p>Slichter was the drummer for this band, whose 1998 album Feeling Strangely Fine featured the hit "Closing Time".</p>	<p><b><u>Semisonic</u></b></p>
<p><b>B</b></p>	<p>The answer to part A sprang from this city's music scene, which is chronicled in the book.</p>	<p><b><u>Minneapolis, MN</u></b></p>
<p><b>C</b></p>	<p>Mentioned in the book is Dave Pirner, the lead singer of this band whose biggest hit was 1994's "Runaway Train".</p>	<p><b><u>Soul Asylum</u></b></p>
<p><b>D</b></p>	<p>Slichter, along with bandmate Dan Wilson, attended this prestigious Massachusetts university.</p>	<p><b><u>Harvard University</u></b></p>



### Tossup 7: Miscellaneous — Sports

<p>This man's first coaching job was at Western Kentucky in the late 1970s under Gene Keady, and in 1980 Keady moved to Purdue, where this man spent the next 18 years. In 1998 he moved to Southern Illinois, where after leading the Salukis to the Sweet Sixteen in 2002, he was succeeded by current Purdue coach Matt Painter. In his second year with his current team, he guided to them the National Championship, with a starting squad including Dee Brown and Deron Williams. Name this current Head Men's Basketball Coach at the University of Illinois.</p>	<p><b>Bruce <u>Weber</u></b></p>
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### Bonus 7: Social Studies — U.S. History

<p>Identify facts in these cases in which Clarence Darrow was a lawyer for the defense.</p>		
<b>A</b>	<p>Perhaps most famously, he defended this man in the so called "Monkey Trial" where the defendant taught evolution to his high school students.</p>	<p><b>John Thomas <u>Scopes</u></b></p>
<b>B</b>	<p>In 1924 Darrow defended these two University of Chicago students who murdered teenager Bobby Franks.</p>	<p><b>Nathan <u>Leopold</u>, Jr. and Richard <u>Loeb</u></b></p>
<b>C</b>	<p>Darrow unsuccessfully tried to prevent Patrick Prendergast from being executed for the murder of this Chicago mayor in 1893.</p>	<p><b>Carter Henry <u>Harrison</u>, Sr.</b></p>
<b>D</b>	<p>These unionist brothers were defended by Darrow after they bombed the Los Angeles Times building in 1910.</p>	<p><b>James and John <u>McNamara</u></b></p>



### Tossup 8: Math — Algebra (Computational: 30 Seconds)

Give your answer as an expanded polynomial in  $x$ . Find the equation of the vertical parabola that passes through the points (1, 0), (3, 0), and (5, 4).

$$y = \frac{1}{2}x^2 - 2x + \frac{3}{2}$$

### Bonus 8: Science — Chemistry

Identify these common chemical solvents.

<b>A</b>	Known as the "universal solvent," this common polar molecule dissolves a vast array of solutes.	<u>Water</u>
<b>B</b>	This six-carbon acyclic hydrocarbon is a common nonpolar solvent, and has the formula $C_6H_{14}$ .	<u>Hexane</u>
<b>C</b>	This polar solvent also known as propanone ( <i>PROH-puh-nohn</i> ) is handy for dissolving superglue and nail polish.	<u>Acetone</u>
<b>D</b>	The traditional component of rubbing alcohol, rather than isopropyl alcohol, it is frequently denatured when not used for drinking purposes.	<u>Ethanol</u> (accept <u>ethyl alcohol</u> )



### Tossup 9: Social Studies — World History

<p>It contains a ritual stone called the Intihuatana Stone, which points directly at the sun during the equinoxes. That stone, along with “The Temple of the Sun” and “The Room of the Three Windows” make up the primary archaeological treasures that comprise the first "zone" of it. With many of the buildings within constructed using Ashlar, a stonecutting technique so good that not even a knife could fit between the bricks, it was rediscovered in 1911 by Hiram Bingham. Famously mentioned in Pablo Neruda's Canto General and located in Peru, identify this "Lost City of the Incas."</p>	<p><b><u>Machu Picchu</u></b></p>
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### Bonus 9: Math — General

Identify these theorems from algebra.		
<b>A</b>	This theorem states that every polynomial has at least one complex root.	<b><u>Fundamental Theorem of Algebra</u></b>
<b>B</b>	This theorem relates its namesake coefficient and the expansion of polynomials, and basically states that the coefficients are equal to a row on Pascal's triangle.	<b><u>Binomial theorem</u></b>
<b>C</b>	Euclid's theorem states that there are infinitely many of these numbers.	<b><u>Prime numbers</u></b>
<b>D</b>	This Greek astronomer's theorem states that if the sum of the products of the opposite sides of a quadrilateral equals the product of its diagonals, it is cyclic.	<b><u>Ptolemy's theorem</u></b>



### Tossup 10: Science — Earth Science

<p>With pressure of about 330 giga-pascals, it may be subject to super-rotation of about one degree a year, since it is not connected to adjacent regions. Discovered in Lehmann, it has a radius of about 750 miles, and since S-waves have been detected passing through it, it is solid. Composed of iron and nickel, and at almost 6000 Kelvin, it may be cooling gradually. Identify this innermost part of the Earth, a solid metal sphere, two layers below the mantle.</p>	<p><u>Inner core</u> (<i>prompt core</i>)</p>
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### Bonus 10: Literature — Literature

<p>Identify the following characters from Literature, each of which killed someone.</p>		
<p><b>A</b></p>	<p>This Camus character killed an Arab man in cold blood and did not weep at his mother's funeral.</p>	<p><u>Mersault</u> (<i>Accept The Stranger</i>)</p>
<p><b>B</b></p>	<p>This Achebe character kills a white court messenger as well as accidentally killing a boy at an old man's funeral, and participating in the sacrifice of Ikemefuna.</p>	<p><u>Okonkwo</u></p>
<p><b>C</b></p>	<p>This man leads the Seven Against Thebes, but ultimately engages in single combat with his brother Eteocles, leading to both of their deaths.</p>	<p><u>Polynices</u></p>
<p><b>D</b></p>	<p>This man pours ear poison in his brother's ear, leading to his usurping both his throne and wife, Gertrude.</p>	<p>King <u>Claudius</u></p>



### Tossup 11: Science — Chemistry

Similar to the larger-scale Casimir effect, this effect explains how gecko feet can cling to glass surfaces. They get stronger as surface area increases, and although they are much weaker than similar forces, they are dominant over long distances for nonpolar molecules. Responsible for bromine and iodine not being gases, name these weak intermolecular forces named after a German chemist, contrasted with dipole-dipole forces.

**London dispersion forces**  
(accept dispersion forces,  
prompt on Van der Waals force)

### Bonus 11: Literature — Literature

Identify the following about the Devil in literature.

<b>A</b>	This New Hampshire farmer reluctantly sells his soul to the Devil, and then is put on trial with Daniel Webster defending him to a jury that includes unsavories such as Thomas Morton and Blackbeard.	<b><u>Jabez Stone</u></b>
<b>B</b>	This work by Mikhail Bulgakov tells of a visit by the Devil to a very atheistic Soviet Union.	<b><u>The Master and Margarita</u></b>
<b>C</b>	This epistolary work by C.S. Lewis tells of Wormwood's attempts to tempt "The Patient" towards "Our Father Below," with the help of the title character.	<b><u>The Screwtape Letters</u></b>
<b>D</b>	This Milton Work tells of the fallen angel Satan, and his adventures in his hell-city Pandaemonium.	<b><u>Paradise Lost</u></b>



### Tossup 12: Social Studies — U.S. History

The original plan was to attack Grant's left, and split his forces, pushing them back into the swamps of the Snake and Owl Creeks, away from the Tennessee River. In the surprise attack, Confederate commander Albert Sidney Johnston was killed in action, and his second in command, P.G.T. Beauregard took over in his stead. Also known as Pittsburgh Landing, identify this battle of the Civil War in which the Confederates lost all hope of preventing the Union from entering Northern Mississippi.

**Battle of Shiloh** (*prompt on Pittsburgh Landing before it is mentioned*)

### Bonus 12: Math — Algebra

Give the determinants of the following matrices:

<b>A</b>	A matrix with top row 4, 7, and bottom row 2, -8.	<b><u>-46</u></b>
<b>B</b>	A matrix with top row 1, -9, and bottom row -11, 3.	<b><u>-96</u></b>
<b>C</b>	A matrix with top row 1, 0, 2, middle row 7, -6, 4, and bottom row 3, 1, -5.	<b><u>76</u></b>
<b>D</b>	A matrix with top row 3, 2, 0, middle row 9, 1, -4, and bottom row -11, -3, 8.	<b><u>-68</u></b>



### Tossup 13: Math — General

<p>One can approximate the sum of this series by adding the Euler-Mascheroni constant to the natural logarithm of the number of terms. Euler showed that the prime-numbered terms of this series diverged. Nicole d'Oresme used the fact that the first two terms were at least <math>1/2</math>, the next two, at least <math>1/4</math>, the next four, at least <math>1/8</math>, and so on, to show that this series as a whole diverges. Name this divergent series, the sum of the reciprocals of the natural numbers.</p>	<p><b>harmonic series</b> (accept <u>harmonic sequence</u>)</p>
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### Bonus 13: Science — Biology

Identify these things related to embryonic development.		
<b>A</b>	Two gametes, the egg and sperm, combine into one diploid cell known as this.	<b>Zygote</b>
<b>B</b>	That cell divides many times into a morula, which then turns into a hollow sphere of cells known as this.	<b>Blastula</b>
<b>C</b>	That sphere then turns into the gastrula, which consists of this many germ layers in mammals.	<b>3</b>
<b>D</b>	This embryonic tube develops into the brain and spinal cord, and is a distinguishing feature of vertebrates.	<b>Neural tube</b>



### Tossup 14: Miscellaneous — Entertainment

<p>In one instance, he is kidnapped and brainwashed by Dimentio, gaining a flair for robotics in the process. It is unknown what kind of shoes he wears, but they are decidedly slippery. He has been portrayed on screen by Danny Wells and John Leguizamo, and is usually shown as cowardly. He is taller, thinner and can jump higher than his brother. Starring as the main character in Mario is Missing! and being the title character in a ghostly game on Gamecube, identify this green-clad plumber, the younger brother of Mario.</p>	<p><b>Luigi</b> (accept <u>Mr. L</u> on early buzz)</p>
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### Bonus 14: Social Studies — Other

Identify these economists.		
<b>A</b>	The concept of the Invisible Hand, in which personal self-interest promotes societal self-interest, was put forth in this man's the Wealth of Nations.	<b>Adam <u>Smith</u></b>
<b>B</b>	A member of parliament, his most important contribution to economics was his theory on how individuals should specialize in certain areas, known as comparative advantage.	<b>David <u>Ricardo</u></b>
<b>C</b>	Macroeconomics incorporates many of this man's ideas, which were expounded in his work titled The General Theory of Employment, Interest, and Money.	<b>John Maynard <u>Keynes</u></b>
<b>D</b>	An adviser to Barry Goldwater during his 1964 election campaign, this University of Chicago professor's use of Monetarism challenged the ideas of the answer to part C.	<b>Milton <u>Friedman</u></b>



### Tossup 15: Literature — Literature

<p>In it, William Dobbin makes sure that George Osborne marries a woman who is a foil to the immoral protagonist. It begins when those two female characters leave Miss Pinkerton's academy to go to Chiswick Mall, a social gathering place in the title location. The protagonist, whose husband is Rawdon Crawley, inherits a fortune from Joseph Sedley, Amelia's fat and cowardly older brother. Taking its name from John Bunyan's A Pilgrim's Progress and subtitled A Novel Without a Hero, identify this satire about Rebecca Sharp by William Makepeace Thackeray.</p>	<p><b><u>Vanity Fair</u>: A Novel without a Hero</b></p>
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### Bonus 15: Miscellaneous — Interdisciplinary

<p>Answer the following about grand slams.</p>		
<p><b>A</b></p>	<p>While no golfer has won the season grand slam, the term was invented for this golfer who won the British and American Opens, as well as the British and American Amateurs in 1930.</p>	<p><b>Robert "Bobby" Tyre <u>Jones</u></b></p>
<p><b>B</b></p>	<p>"Operation Grand Slam" is an important plot element in this James Bond novel.</p>	<p><b><u>Goldfinger</u></b></p>
<p><b>C</b></p>	<p>The 2007 first season of the American version of British game show Grand Slam was won by this Jeopardy! champion, NAQT question writer and author of Brainiac.</p>	<p><b>Ken <u>Jennings</u></b></p>
<p><b>D</b></p>	<p>Of the three women to win the women's grand slam of tennis, she was the last to do so in 1988.</p>	<p><b>Stefanie "Steffi" Maria <u>Graf</u></b></p>



### Tossup 16: Fine Arts — Visual Art

This painting debuted at the Royal academy in 1821 under the name Landscape Noon, although it failed to find a buyer, it would later be praised in France by artists like Theodore Gericault. The painting, which takes place on the River Stour in Suffolk is actually the property of the artist's uncle. The house on the left side of this painting was owned by Willy Lott, and in the center of the painting three horses wearing red harnesses pull a carriage up a river. Currently exhibited in the National Gallery of London, Identify this painting of a rural landscape by John Constable.

**The Hay Wain**

### Bonus 16: Math — Geometry

Find the surface areas of the following objects.

<b>A</b>	A tetrahedron with side length 2.	<b><u>2 root 3</u></b>
<b>B</b>	A cylinder whose height is 2 and radius is 4.	<b><u>48 pi</u></b>
<b>C</b>	A sphere whose volume is 9 pi over 2.	<b><u>9 pi</u></b>
<b>D</b>	A cylinder inscribed in a cube with surface area of 96.	<b><u>16 pi</u></b>



### Tossup 17: Social Studies — World History

<p>A legend states that as a teenager, he found an eagle's nest with seven chicks in it, leading to his decision to install the eagle as the symbol of the Senate and People of Rome. A center figure in the fight against Mithridates, he was elected consul an unprecedented seven times during his career. The rival to Sulla during the First Civil War, identify this Roman general and politician known for his dramatic reforms of the Roman armies, including allowing landless citizens to enlist for the first time.</p>	<p><b>Gaius <u>Marius</u></b></p>
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### Bonus 17: Science — Astronomy

Identify these kinds of astronomical bodies.		
<b>A</b>	Discovered by Antony Hewish, these magnetized rotating neutron stars release intermittent bursts of radiation.	<b><u>Pulsar</u></b>
<b>B</b>	These old stars are supported only by electron degeneracy pressure, and are expected to slowly get dimmer.	<b><u>White dwarf</u></b>
<b>C</b>	This is a gravitationally powerful region of space from which nothing can escape once passing its event horizon.	<b><u>Black hole</u></b>
<b>D</b>	This is a huge, relatively light star in which fusion is occurring in the shell. It is named for its color and size.	<b><u>Red giant</u></b>



### Tossup 18: Science — Physics

<p>Created as part of its namesake's mathematical solution to the ultraviolet catastrophe, it allowed treating oscillator energies with statistical mechanics. In 1905, Einstein showed that this same constant showed up in the quantization of the photoelectric effect, and it later showed up in work of Bohr and Heisenberg. Name this now-ubiquitous constant in quantum mechanics, whose reduced form is known as <math>\hbar</math>, equal to roughly 6.6 times 10 to the negative 34 Joule seconds.</p>	<p><b><u>Planck's constant</u></b></p>
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### Bonus 18: Literature — Mythology

<p>Identify the following characters from Mythology.</p>		
<p><b>A</b></p>	<p>This deity is the highest object of worship in Zoroastrianism.</p>	<p><b><u>Ahura Mazda</u></b></p>
<p><b>B</b></p>	<p>This mythical hunter-warrior of Irish mythology once burned his thumb and accidentally ate from the Salmon of Knowledge.</p>	<p><b><u>Finn McCool</u></b> (accept <i><u>Fionn mac Cumhaill</u></i>)</p>
<p><b>C</b></p>	<p>This figure traveled to the underworld in order to bring back his beloved Euridice.</p>	<p><b><u>Orpheus</u></b></p>
<p><b>D</b></p>	<p>This woman is the consort of Cupid, who was to only see him in complete darkness, but became too curious and used an oil lamp to see who he was, leading to her going on a bunch of long quests.</p>	<p><b><u>Psyche</u></b></p>



### Tossup 19: Math — Calculus (Computational: 30 Seconds)

Evaluate the definite integral from  $t$  equals 0 to  $t$  equals 4, of  $t$  times  $e$  to the  $t$  power,  $dt$ .

**3 e to the fourth, + 1**

### Bonus 19: Fine Arts — Visual Art

Name the following artists who all drew something associated with a hospital.

<b>A</b>	This artist depicted surgery as a healing profession, rather than just for amputation, in his <i>The Gross Clinic</i> .	<b>Thomas <u>Eakins</u></b> ( <i>AY-kens</i> )
<b>B</b>	This artist, more famous for a different work, drew numerous people mourning in <i>Death in the Sickroom</i> .	<b>Edward <u>Munch</u></b> ( <i>MOONK</i> )
<b>C</b>	This artist made frequent visits to an asylum in order to gain more realism in his works like <i>Portrait of a Kleptomaniac</i> and <i>Mad Woman with a Mania of Envy</i> .	<b>Théodore <u>Géricault</u></b>
<b>D</b>	While residing in the clinic <i>Saint-Paul-de-Mausole</i> in Saint-Rémy, this artist drew his <i>Bedroom in Arles</i> , along with a much more famous work.	<b>Vincent <u>Van Gogh</u></b>



### Tossup 20: Literature — Literature

<p>One character in this work wrote a sonnet entitled "Hope" that the main character calls frightful and trash, while one of the females in this play wrote letters of love to Clitandre, Acaste, and Oronte. Philinte is in love with Eliante, who rejects the protagonist after he turns down the love of Celimene and threatens to take his honest heart elsewhere. Containing the incessant whining of Alceste, identify this work about a man who hates everyone, written by Molière.</p>	<p><b>The <u>Misanthrope</u></b> (<i>accept Le <u>Misanthrope</u></i>)</p>
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### Bonus 20: Social Studies — World History

<p>Answer these questions related to Fidel Castro.</p>		
<p><b>A</b></p>	<p>In 1959, Castro and his followers overthrew this corrupt Cuban leader.</p>	<p><b>Fulgencio <u>Batista</u></b></p>
<p><b>B</b></p>	<p>This movement to overthrow Cuba's leader at the time was named after a failed attack on the Moncada barracks.</p>	<p><b><u>July 26th Movement</u></b> (<i>accept 26 de Julio Movimiento</i>)</p>
<p><b>C</b></p>	<p>This Argentinian guerrilla was part of the movement mentioned in Part B, and was later president of the Cuban National Bank before being murdered in 1967.</p>	<p><b>Ernesto "Che" <u>Guevara</u></b></p>
<p><b>D</b></p>	<p>In February 2008, this brother of Fidel Castro was elected President of Cuba, due to Fidel's failing health.</p>	<p><b><u>Raul Modesto Castro</u></b> (<i>prompt Castro</i>)</p>



### Tossup A: Fine Arts — Music

<p>He was appointed Master of the King's Musik in 1924, and in 1925 recieved the Gold Medal of the Royal Philharmonic Society. One of his early works, Salut D'amour gave him the credentials and exposure to continue writing, while one of his most famous consists of 14 parts, the first being named C.A.E., after his wife, and the finale being named E.D.U. after his wifes nickname for him. Identify this composer of the Enigma Variations and Five marches named Pomp and Circumstance.</p>	<p><b>Edward <u>Elgar</u></b></p>
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### Bonus A: Literature — Mythology

<p>Answer the following about a famous Greek inventor.</p>		
<p><b>A</b></p>	<p>He is best known for this feature, which served as the home of the Minotaur.</p>	<p><b>The <u>Labyrinth</u></b></p>
<p><b>B</b></p>	<p>This is the inventor of the answer to number 1.</p>	<p><b><u>Daedelus</u></b></p>
<p><b>C</b></p>	<p>This is his son, famous for some melting wax wings and "flying too close to the sun."</p>	<p><b><u>Icarus</u></b></p>
<p><b>D</b></p>	<p>Another story involving him includes him pushing this nephew off of a high tower, with Athena turning him into either a partridge or a peacock during his fall.</p>	<p><b><u>Perdix</u></b></p>



### Tossup B: Social Studies — U.S. History

<p>Theoretically, this state entered the Union in 1803. However, Congress forgot to vote on the matter, and technically left the statehood question unresolved until 1953. Its first capital was Chillicothe, and in 1894, Coxey's Army originated here before traveling east to Washington D.C. This state has sent eight residents to the White House and emerged victorious in the Toledo Strip war with neighboring Michigan. Name this state, whose capital is at Columbus.</p>	<p><b><u>Ohio</u></b></p>
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### Bonus B: Science — Physics

<p>Name these physical laws relating to electromagnetism.</p>	
<p><b>A</b></p>	<p>This inverse-square law of electrostatics relates the force on one charge from another to the magnitudes of the charges and distance between them.</p> <p><b><u>Coulomb's Law</u></b></p>
<p><b>B</b></p>	<p>One of Maxwell's equations, this law relates the electromotive force induced in a closed loop to the change in magnetic flux through the loop.</p> <p><b><u>Faraday's Law of Induction</u></b></p>
<p><b>C</b></p>	<p>Useful in calculations involving induced electromotive force, this law states that the direction of the induced force opposes that of the change in flux.</p> <p><b><u>Lenz's Law</u></b></p>
<p><b>D</b></p>	<p>Maxwell added a displacement current to this law, which relates the magnetic field around a loop to the current passing through it.</p> <p><b><u>Maxwell-Ampere's Law</u></b></p>



### Tossup C: Literature — Mythology

<p>He spent a night in Skymir's glove, but slept badly due to its owner's snoring and therefore tried to kill him. While he didn't manage to kill Skymir, he was responsible for the death of Hrungnir. However, his weapon was then stolen by Thrymr and he had to disguise himself as Freya to retrieve it. Name this god who never got along with giants and wielded the hammer Mjollnir.</p>	<p><u>Thor</u></p>
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### Bonus C: Math — Calculus

Find the areas of the following shapes.		
<b>A</b>	An annulus with outer radius 3, and inner radius 2.	<u>5 pi</u>
<b>B</b>	The area between $y = x$ and $y = x$ squared.	<u>1/6</u>
<b>C</b>	The area between $y = \sin x$ , and the x-axis, from $x$ equals 0 to $x$ equals pi.	<u>2</u>
<b>D</b>	The area between $y = x$ squared and $y = x$ cubed.	<u>1/12</u>