Illinois Masonic Academic Bowl
2016 Sectional Tournament

Round 6
1st Section
Toss-up Questions

Question #1: Literature – British Literature

10 points

In one of this author's novels, a note reading "done because we are too menny" is left by Little Father Time to explain a murder-suicide. This author created a sailor who swore off alcohol for 21 years after he took five guineas as payment for his wife and daughter. One of his title characters worked at Talbothays Dairy as a milkmaid. That "pure woman", who was loved by Angel Clare, was executed for the murder of Alec. Name this author of *Jude the Obscure*, *The Mayor of Casterbridge*, and *Tess of the d'Urbervilles*.	Thomas **Hardy**

Question #2: Miscellaneous – Sports

10 points

In 2003, Maren Meinert sent this game into overtime, during which Nia Kunzer scored a golden goal. Norway appeared in the first two of these matches, losing the first to the U.S. and defeating Germany in the second. In one iteration of this game, Kristine Lilly's header kept the game scoreless, and after scoring the game-winning penalty kick Brandi Chastain removed her shirt in celebration. Name this quadrennial game, whose latest iteration saw Carli Lloyd score a hat trick as the USA beat Japan 5-2.	FIFA **Women's World Cup Final** [accept **Championship** or equivalents for **Final**; prompt on partial answers; prompt on **soccer** or association **football**]

Question #3: Mathematics – Math Concepts

10 points

The product of two sums of these numbers equals the sum of two of these numbers according to the Brahmagupta-Fibonacci [brah-mah-GOOP-tah fih-boh-NAH-chee] identity. The sum of any two consecutive triangular numbers must be one of these numbers. The *n*th value of these numbers equals the previous value plus 2*n* minus one, which is a reason that these numbers are generated by adding consecutive odd numbers starting from 1. A set of these numbers in which one of them is the sum of the other two is a Pythagorean triple. Name these numbers such as 1, 4, 9, 16, and 25.	perfect **square**s [or **square** numbers]

Question #4: Social Studies – World History

10 points

Gyrth unsuccessfully argued for a delay prior to this battle, during which he was killed along with his brother Leofwine [lee-ohv-"wine"]. The winning side at this battle planned for a landing on the Isle of Wight, but came ashore at Pevensey instead. The losing side's forces mostly consisted of fyrd and housecarls, and its commander was killed at Senlac Hill by an arrow to the eye, which was depicted on the Bayeux ["by-you"] Tapestry. This battle occurred early in the Norman conquest of England. Name this 1066 battle won by William of Normandy.	Battle of **Hastings**

Question #5: Science – Biology

10 points

The kinetic properties of these substances are shown on a Lineweaver-Burk plot and are modeled by the Michaelis-Menten [mih-KAY-liss MEN-tin] equation. The induced-fit model describes these proteins, having superseded the lock-and-key model of how substrates ["SUB-straights"] bind to their active sites. Their names often end in "ase", as in reductase [ree-DUK-tayss]. Name these proteins that act as biological catalysts.	**enzyme**s [prompt on **catalyst**s]

Question #6: Literature – U.S. Literature

10 points

The protagonist of this novel was chipping ice to cool the title character when a flashback caused her to attack Mr. Bodwin with the pick in her hand. Drawing on the Margaret Garner incident, much of this novel's action takes place at 124 Bluestone Road, the address for the Sweet Home plantation. In response to the schoolteacher's approach, the protagonist took a saw to the title character's throat to prevent her becoming a slave. Name this novel in which the escaped slave Sethe ["SETH"-uh] kills the title child, and which was written by Toni Morrison.	***Beloved***

Question #7: Mathematics – Probability

10 points per part

Problems in this branch of probability often use a vertical bar to mean "given that".		
1	Name this area of probability concerned with events that depend on other events.	**conditional** probability [prompt on **posterior**; prompt on but do not say **Bayes**ian probability]
2	A prominent theorem in conditional probability is named for this 18th-century Englishman. This theory relates the probability of A given B, to the probability of B given A, using the separate probabilities of A and B.	Thomas **Bayes** [or **Bayes**'(s) **theorem**]
3	A person flips two fair coins, and at least one of the coins is a head. What is the probability that both of the coins are heads? The answer is not $\frac{1}{2}$.	$1/3$ [or 0**.3 repeating**]

Question #8: Mathematics – Probability

10 points per part

The answer to this problem is generally given as 23 people.		
1	Name this problem that asks how many people need to be in a room so that it's more likely than not that at least two of the people have a certain thing in common.	**birthday** problem [or **birthday fallacy** or similar answers]
2	Because of this "principle", the probability of at least two people having a common birthday equals one if the number of people is at least 367.	**pigeonhole** principle [or **Dirichlet**'s box or **Dirichlet**'s **drawer** principle]
3	If two people who were not born in a leap year are chosen at random, what is the probability that they share a birthday?	**1/365**

Question #9: Social Studies – Geography

10 points per part

Coeur d'Alene [kur duh-"LANE"] is the largest city in this state's panhandle.		
1	Name this state separated from Montana by the Bitterroot Mountains.	**Idaho**
2	Idaho borders six states and this Canadian province that contains Vancouver.	**British Columbia**
3	The Snake River winds through this gorge on the border of Oregon and Idaho. This is the deepest river gorge in the United States.	**Hells** Canyon

Question #10: Social Studies – Geography

10 points per part

This trail passed by some of the oldest houses in the United States, which are pueblos.		
1	Identify this trail named for its ending point, which is now the capital of New Mexico.	**Santa Fe** Trail
2	Though the Santa Fe Trail had some different routes, the mountain route followed much of this river that goes through Pueblo, Colorado and Wichita, Kansas.	**Arkansas** River
3	In the 1800s, the eastern terminus of the Santa Fe trail was the city of Franklin in this state. The Oregon Trail began at Independence in this same state.	**Missouri**

Question #11: Science – Physics

10 points per part

This physicist's namesake equation can be written as "*H* psi ["sigh"] equals *E* psi".		
1	Identify this Austrian physicist, also the namesake of a thought experiment involving a cat that is both alive and dead.	Erwin (Rudolf Josef Alexander) **Schrödinger** [AIR-vin SHRAY-din-gur]
2	The Schrödinger equation is used to analyze the energies of this simple system, which consists of a particle in a small space with two impenetrable barriers around it	**particle in a box** [or **infinite square well**]
3	The "psi" in the Schrödinger equation is one of these "functions" that describe the quantum state of a particle.	**wave** functions

Question #12: Science – Physics

10 points per part

Physics students usually assume that these objects are massless and frictionless, and that the ropes going across them do not stretch at all.		
1	Name this simple machine consisting of a wheel around which a rope or a cable is partly wound.	**pulley**(s)
2	This setup consists of multiple pulleys aligned on the same axle. It results in a great mechanical advantage because the tension is distributed over several loops of rope.	**block and tackle**
3	A pulley is also used in this "machine", in which a rope with two different masses on each end is passed over a pulley.	**Atwood**('s) machine

Question #13: Literature – World Literature

10 points per part

In *The Sailor Who Fell From Grace with the Sea*, one of these animals is smashed against a rock and then dissected.		
1	Name this kind of animal, one of which drowns in a tub of goldfishes in a Thomas Gray poem.	(house) **cat** [or **kitten**; or ***F****elis* ***silvestris*** *catus* or **F**elis **catus**]
2	This Japanese author of *The Sailor Who Fell from Grace with the Sea* included the koan "Nansen kills a kitten" in his novel *The Temple of the Golden Pavilion*.	**Mishima** Yukio [accept **Kimitake** Hiraoka; accept names in either order; prompt on **Yukio**]
3	Mishima performed this act after a failed attempt to overthrow the Japanese government.	**suicide** [accept or **seppuku** or **hara-kiri**; accept other answers referring to **killing himself** with a sword]

Question #14: Literature – World Literature

10 points per part

The type of stanza named after this character uses iambic tetrameter ["eye-AM"-bik tet-RAM-ih-tur].		
1	Name this fictional Russian character who rejected the advances of Tatiana, only for Tatiana to reject him after marrying Prince Gremin. This is the title character of a novel written in verse.	**Eugene Onegin** [or **Yevgeny Onegin**; accept any underlined name]
2	Eugene Onegin was written by this poet. He wrote about an army officer who went insane after losing a fortune at cards in *The Queen of Spades*.	Alexander (Sergeyevich) **Pushkin**
3	As a result of his flirtations with Olga, Eugene takes part in one of these events, which ends with the death of Vladimir Lensky.	**duel**s [prompt on **fight**s or similar terms]

Question #15: Social Studies – Economics

10 points

The Black-Scholes model finds this quantity for European put and call options. Market participants who cannot affect this concept are called "takers" of it. In the income effect, aggregate demand goes up while this value remains constant. This value's elasticity refers to a relative change in it with respect to a change in aggregate demand. Creating distinct markets for different groups of consumers allows for discrimination based on this concept. Name this economic quantity, the amount of money required to pay for a good or service.	**price** [accept **cost**]

Question #16: Science – Chemistry

10 points

Hammond's postulate says that a transition state's structure will resemble whichever of the reactants or products is closer to it in this value. One type of this quantity is equal to negative Boltzmann's constant times temperature times the natural log of the partition function, and is applicable to systems with constant volume and temperature. Another form of this quantity is equal to enthalpy minus temperature times entropy, and is used to determine whether or not a reaction is spontaneous. Name these quantities, which measure "usable" work, types of which are named for Helmholtz and Gibbs.	**free energy** [accept Helmholtz **free energy** or Gibbs **free energy**; prompt on **energy**; prompt on **Gibbs function**]

Question #17: Fine Arts – Classical Music & Opera

10 points

Ottorino Respighi [oh-toh-REE-noh res-PEE-gee] used music from this composer for the ballet *The Fantastic Toyshop*. One of this composer's operas, based on a Voltaire novel, involves a love letter sent from Amenaide [ah-meh-nayd] to the title character, Tancredi. Near the beginning of another of this composer's operas, "Miei rampolli femminini [mee-AY rahm-POH-lee feh-mee-NEE-nee]" is sung by Don Magnifico [dohn mahn-YEE-fee-koh]. The title character in that opera, who forgives her family in the aria "Non più [pyoo] mesta", is based on Cinderella. In another opera by this composer, "Una voce poco fa [OO-nah VOH-chay POH-koh FAH]" is sung by Rosina. Name this Italian composer who wrote about Count Almaviva in *The Barber of Seville*.	Gioachino (Antonio) **Rossini**

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

10 points

In this battle's aftermath, Charles O'Hara's sword was accepted by Benjamin Lincoln. Robert Abercrombie's spiking of cannons did little in this battle, while the capture of Redoubts Nine and Ten helped turn the tide. The Comte de Grasse's [kawmt day GRAHSS'z] defeat of Thomas Graves prevented a naval escape in this battle, and the losing side's band played the tune "The World Turned Upside Down" during the surrender. This battle was fought about 20 miles east of Williamsburg, Virginia, and it ended in October 1781. Name this Revolutionary War battle that culminated in Cornwallis's surrender.	Battle (or Siege) of **Yorktown**

Question #19: Literature – World Literature

10 points

This author created characters who "live horizontally" sitting in lounge chairs. In a novel by this writer, the medical director Behrens is compared to Rhadamanthys [rad-uh-MAN-thiss]. In that novel by this author, Hans Castorp travels to a sanatorium and is infected by tuberculosis. In a novella by this author, the protagonist travels to Lido [LEE-doh] island and meets a beautiful Polish boy named Tadzio. Name this German novelist of *The Magic Mountain* who wrote about Gustav [GOO-staf] von Aschenbach in *Death in Venice*.	(Paul) Thomas **Mann** [TOH-mahss MAHN]

Question #20: Science – Astronomy

10 points

A catalogue of these objects sorted by their spectra was researched by Edward Pickering and is named for Henry Draper. These objects were classified into five classes by Angelo Secchi [SEK-kee]. If their spectra lack hydrogen lines, these objects are classified as Wolf-Rayet. These are sorted by temperature using the Morgan-Keenan system, which uses the letters O, B, A, F, G, K, and M. These objects often evolve along the main sequence on the Hertzsprung-Russell diagram. Groups of them can appear to form patterns such as asterisms and constellations. Name these hot objects in the universe that produce light, one example of which is the Sun.	**star**s

Question #21: Fine Arts – Art History

10 points per part

This artist beat out Filippo Brunelleschi [broo-neh-LESS-kee] for one prominent job but then lost to him for another.		
1	Name this artist whose bronze doors were nicknamed "the Gates of Paradise" by Michelangelo.	Lorenzo **Ghiberti** [gee-BAIR-tee]
2	Brunelleschi's dome and Ghiberti's doors are in this city, which is also the home of Michelangelo's *David*.	**Florence**, Italy [or **Firenze**]
3	This 15th-century artist made several works for the Convent of San Marco in Florence, including the fresco *The Annunciation*.	Fra **Angelico** [or Guido di **Pietro** or Fra Giovanni da **Fiesole** or Fra Giovanni **Angelico** or il Beato **Angelico**]

Question #22: Fine Arts – Art History

10 points per part

One of several works by this painter showing horses is *The Parade*, also known as *Race Horses in front of the Tribunes*.		
1	Name this French artist who also painted *Ballet Rehearsal* and *The Ballet Class*. He was sometimes classified as an Impressionist against his wishes.	Edgar **Degas** [day-gah] [or Hilaire-Germain-Edgar **Degas**]
2	Degas' trip to the United States led to his first successful painting, which shows a cotton office in this city.	**New Orleans**, Louisiana
3	Degas made a portrait of this American Impressionist who moved to France. Many of this artist's paintings showed a mother and child.	Mary **Cassatt**

Question #23: Social Studies – U.S. History

10 points per part

This boat's captain ignored the recommendation from the Admiralty that it zigzag its path to avoid detection by U-boats.		
1	Name this British ocean liner that was sunk on May 7, 1915. The Germans cited the munitions it was carrying as justification for the attack.	RMS ***Lusitania***
2	The *Lusitania* was on its normal return voyage from this American city to Liverpool when it was attacked.	**New York** City [accept **NYC**]
3	In the aftermath of the sinking of the *Lusitania*, this pacifist Secretary of State resigned.	William Jennings **Bryan**

Question #24: Social Studies – U.S. History

10 points per part

Designed to favor manufacturers in the Mid-Atlantic, this legislation raised duties on hemp, wool, and imported textiles.		
1	Name this legislation intended to sink the presidency of John Quincy Adams. Henry Clay proposed using some of the funds generated by it to repopulate slaves overseas.	Tariff of **1828** or Tariff of **Abominations**
2	In response to the passage of the Tariff of 1828, this vice president from South Carolina wrote that states had the right to nullify federal laws.	John C(aldwell) **Calhoun**
3	After South Carolina nullified the Tariff of 1828, Congress reduced some of the tariffs in an 1832 bill but also passed this law that allowed for the use of federal troops to collect tariff funds.	**Force** Bill [or **Force Act**]

Question #25: Science – Chemistry

10 points per part

This law states that pressure times volume equals the number of moles of the substance times a constant times temperature.		
1	Name this law about a certain phase of matter. The van der Waals [van dur "walls"] equation adjusts this law to account for intermolecular forces.	**ideal gas** law [accept **combined gas** law]
2	The ideal gas law is obtained by combining Charles' law, Gay-Lussac's law, Avogadro's law, and this law stating that at constant temperature and for a fixed amount of a gas, pressure and volume are inversely proportional.	**Boyle**'s law
3	The ideal gas law and this theory of gases make the same simplifying assumptions: molecular collisions are perfectly elastic, and individual molecules have no volume.	**kinetic**-molecular theory (of gases)

Question #26: Science – Chemistry

10 points per part

This theory was developed by Ronald Gillespie and Ronald Nyholm.		
1	Name this theory that predicts molecular structure based on the repulsion of electron pairs.	**VSEPR** [VES-pur] theory [or **valence-shell electron pair repulsion** theory]
2	Since water has two bonds and two lone pairs, VSEPR theory predicts that it will have this geometry.	**bent** geometry or **bent** shape [accept similar answers that contain **bent**]
3	Electron pairs and bonds are shown on "dot structures" named for this chemist, who also proposed a theory of acids and bases which defines them as electron-pair acceptors and donors.	Gilbert Newton **Lewis**

Question #27: Literature – U.S. Literature

10 points per part

Near the end of this play's first act, one character ponders the vastness of the universe, thinking it is contained "within the mind of God".		
1	Name this Thornton Wilder play narrated by the Stage Manager.	***Our Town***
2	Members of these two families drive most of the play's action; they are bound together at the end of Act II upon the wedding of George and Emily.	**Gibbs** and **Webb** families [either order; accept variations like **Gibbs**es and **Webb**s]
3	*Our Town* is set in this fictional New Hampshire town.	**Grover's Corners** [do not accept "Grover's Corner"]

Question #28: Literature – U.S. Literature

10 points per part

In this story, Professor Baglioni [bal-YOH-nee] gives a scientist medicine that kills him.		
1	Name this short story about a young woman who became poisonous due to her father's experiments.	"**Rappaccini's Daughter**"
2	Goodman Grey claimed that the title religious leader in this story had gone mad for donning a garment made of crepe [krape]. It was inspired by the career of Joseph Moody, who performed a similar action after killing a friend.	"The **Minister's Black Veil**"
3	"Rappaccini's Daughter" and "The Minister's Black Veil" were written by this author of *The Scarlet Letter*.	Nathaniel **Hawthorne** [or Nathaniel **Hathorne**]

Question #29: Mathematics – Math Concepts

10 points

Bézout's [beh-zoo'z] identity states that this value can be written as a linear combination of two given numbers. This operation on A and B is used to determine whether A times X plus B times Y equals C has integer solutions for X and Y. This value can be found by repeatedly replacing the larger of two numbers with the difference of the numbers, a procedure called the Euclidean [yoo-KLID-ee-un] algorithm. This value can also be found for two numbers by multiplying the numbers and dividing by their least common multiple. If this value for two numbers is equal to one, the numbers are called "relatively prime". Name this value, the largest that evenly divides two given numbers.	**greatest common divisor** [or **greatest common factor** or **GCD** or **GCF** or **highest common factor** or **hcf**]

Question #30: Social Studies – World History

10 points

This leader defeated the Merkit tribe after it kidnapped his wife, Borte [BOR-tuh]. One of his shamans claimed that this man was the representative of the "Eternal Blue Sky". This ruler promulgated the Yasa law code and established a capital at Karakorum [kahr-uh-KOR-um]. During the ostracism following the death of his father Yesukhei [YEH-soo-kye], this leader killed his half-brother, Bekhter. This leader was succeeded by his son Ogedei [OE-guh-die]. Name this founder of the Mongol empire, the grandfather of Kublai Khan.	**Genghis** Khan [or **Temujin** or **Chingis** Khan; prompt on **Khan**]

Question #31: Science – Physics

10 points

These devices generate both the pump and the probe used in "pump-probe" techniques. Common gain media used in these devices include neodymium [nee-oh-"DIE"-mee-um]-doped Y.A.G. or a mixture of helium and neon. Pumping is used in these devices in order to achieve a state called population inversion, during which a photon is less likely to be absorbed and more likely to result in stimulated emission. Name these devices that produce a coherent, focused beam of light, which is often green or red.	**laser**s

Question #32: Literature – British Literature

10 points

This writer ended the preface to a novel by stating "All art is quite useless." One of this author's title characters discovered a bank book with a lock that outlined payments to a woman later revealed to be her mother, Mrs. Erlynne [UR-lin]. Lord Darlington's interest in a married woman is for naught in this writer play *Lady Windermere's Fan*. His time in prison for homosexuality inspired his "Ballad of Reading Gaol [RED-ing "jail"]". Name this author who wrote about a painting that aged instead of the person it depicted in *The Picture of Dorian Gray*.	Oscar (Finghals O'Flahertie Wills) **Wilde**

Extra Question #1: Fine Arts – Art History

10 points

One painting by this artist shows a young man with one shoe off kneeling away from the viewer and being hugged by his father. Another Biblically inspired work by this painter shows a shocked group looking at a hand that is writing vertical Hebrew words. In addition to *Return of the Prodigal Son* and *Belshazzar's Feast*, this artist made a painting showing a forearm muscle lesson, and one of a militia company led by Captain Frans Banning Cocq. Name this 17th-century Dutch painter of *The Anatomy Lesson of Dr. Nicolaes Tulp* and *The Night Watch*.	**Rembrandt** [or Rembrandt Harmenszoon **van Rijn**]

Extra Question #2: Mathematics – Math Concepts

10 points

Every natural number is the sum of at most nine whole numbers raised to this power. This is the fewest number of dimensions in which a random walk is not expected to return to the origin. When the chaos game has this many starting sides, it creates the Sierpinski [sir-PIN-skee] gasket. This number is the smallest possible degree of a polynomial whose graph has an inflection point. A polygon with this many sides must be convex and does not have any diagonals. Name this smallest *odd* prime number, equal to the degree of a cubic and the number of sides of a triangle.	**3** [or **third** (power); accept perfect **cube**s or **cubic** functions/polynomials]

Extra Question #3: Literature – U.S. Literature

10 points

In one play by this author, Grandma tells Mrs. Barker about an adopted baby who was killed. In another play by this author, Peter holds the knife that Jerry uses to commit suicide. In the most famous play by this writer of *The American Dream*, one character announces that a porcupine caused a car accident that killed a man. That statement occurs during a game of "Bringing up Baby". The characters in that play by this author figure out that George and Martha's son is fictional. Name this author of *The Zoo Story* and *Who's Afraid of Virginia Woolf?*.	Edward (Franklin) **Albee**

Extra Question #4: Science – Physics

10 points

This kind of motion is represented by matrices in the group SO(3) [S-O "three"]. A disc undergoing this motion at relativistic speeds should appear to both contract and not contract according to Ehrenfest's paradox. When a system's Lagrangian [luh-GRAHN-zhee-un] is symmetric with respect to this process, Noether's [NOY-tur'z] theorem states angular momentum will be conserved. The analog of mass for this sort of motion is the moment of inertia. Name this type of motion that occurs around an axis in a wheel.	**rotation** [accept **rotating**; accept **spin**ning]

Extra Question #5: Social Studies – U.S. History

10 points

At a conference in Albany, this groups ceded control of Ohio with the exception of the Wyoming and Susquehanna [sus-kweh-HAN-uh] Valleys. This group fought a French-backed enemy in the Beaver Wars. Bound together by the Great Law of Peace, this group was founded by Dekanawidah [duh-KAN-uh-WEE-duh] and Hiawatha. This group added the Tuscarora in 1722, changing one of their names from the Five Nations to the Six Nations. Name this amalgamation of Indian tribes in the northeast United States.	**Iroquois Confederacy** or **Iroquois League** [accept **Haudenosaunee** or **People of the Long House**; prompt on **Iroquois**, **Five Nations**, or **Six Nations**]

Extra Question #6: Literature – U.S. Literature

10 points per part

In one poem, this writer described how "someones married their everyones" and "one day anyone died i guess."		
1	Name this poet who employed unconventional punctuation and capitalization in such poems as "Maggie and Milly and Molly and May".	E(dward) E(stlin) **Cummings**
2	The title locale in this E. E. Cummings poem has "up so floating many bells down", which does not help the children who "are apt to forget to remember."	**Anyone Lived in a Pretty How Town**
3	In a Cummings poem about this character, who is "glad and big", the narrator indicates that unless "statistics lie", this figure was "more brave than me, more blonde than you."	**Olaf** [accept **I Sing of Olaf Glad and Big**]

Extra Question #7: Literature – U.S. Literature

10 points per part

This character started a school called Plumfield on an estate she inherited from an aunt, and ran it with her husband, a professor from Germany.		
1	Name this character, called "my dear fellow" by Laurie, who worked as a governess for the Kirkes in New York before meeting Fritz.	**Jo**sephine March [accept **Jo Bhaer**, prompt on **March** or **Bhaer**]
2	Jo March was the second-oldest sister in this author's novel *Little Women*.	Louisa May **Alcott**
3	This eldest of the March sisters married John Brooke, Laurie's tutor. She gave birth to the twins Daisy and Demi, and later had another daughter, Josy.	**Meg** March [prompt on **March**]

Extra Question #8: Mathematics – Geometry

10 points per part

This statement is equivalent to Playfair's axiom.		
1	Name this postulate stating that if a line intersects two lines, then the two intersected lines meet on the side where the angles formed with the one line total less than two right angles.	**parallel** postulate [or **fifth** postulate; accept, but do not otherwise reveal, **Euclid**'s **fifth** postulate]
2	The parallel postulate was the fifth postulate stated in the geometry textbook *Elements* by this ancient Greek mathematician.	**Euclid** (of Alexandria)
3	Give the total measure of two right angles.	**180** degrees or **pi** radians

Extra Question #9: Mathematics – Geometry

10 points per part

In this kind of triangle, the square of the length of the longest side is greater than the sum of the squares of the other two sides.		
1	Name this kind of triangle that contains an angle measuring between 90 and 180 degrees.	**obtuse** triangle(s)
2	Triangles with obtuse angles are either isosceles ["eye"-SAH-suh-lees] or this type of triangle, which has three different side lengths.	**scalene** triangle
3	Find the length of the longest side of an isosceles triangle if its vertex angle is 120 degrees, and each of the other sides is six units long.	**6 root 3** units [or **6 times the square root of 3** or **6 radical 3** or equivalents]