# ABT OPEN 1995 Round 8
# Quarterfinals
## Questions written and edited by
## TRIAD QUESTIONS

**1.**

**TOSS-UP MATH**
What is the definite integral of the function 2X cubed plus 6X squared plus 5 from one to zero?
ANSWER----(8 & ½)

**1.**

**BONUS MATH**
Find the following from the function F of X equals 1/3 X cubed plus 6X squared plus 35X plus 5.
1. The first derivative.
2. The value of the slope of the function at X = 4.
3. The coordinates of the global maximum of the curve.
4. The x coordinate of the inflection point.
ANSWER----1.(X squared plus 12X plus 35)    2.(69)    3.((Negative 3, 36))    4.(Negative 6)

**2.**

**TOSS-UP SOCIAL STUDIES**
Subdivided into the Skagit, Hozomeen and Okanogan ranges, it extends about 700 miles from the Feather river in northeastern California to the Fraser river in British Columbia. For ten points name this mountain range that includes Mounts Glacier Peak, Adams, Hood and Shasta.
ANSWER----(Cascades)

**2.**

**BONUS SOCIAL STUDIES**
Identify the state in which the major part of the following mountain ranges are located.
1. Black Hills.    2. Catskills.    3. White Mountains. 4. Blue, Steens and Strawberry Mountains.
ANSWER----1.(South Dakota)    2.(New York)    3.(New Hampshire)    4.(Oregon)

**3.**

**TOSS-UP LITERATURE**
His father founded the town of Coopertown, NY. He was expelled from Yale, became a sailor, and then settled on a farm to write. His first novel Precaution was a failure but he continued to write and found success with his novel The Pilot. For ten points name this man who is primarily known for five books collectively known as The Leatherstocking Tales.
ANSWER----(James Fenimore Cooper)

**3.**

**BONUS LITERATURE**
Identify the following about the French novel Les Miserables.
1. Name the author.                        2. Name the main character who is imprisoned for stealing.
3. What did the man in part two steal to give to his sister's family, be specific.
4. The detective who seeks the man in part 2 upon his release from prison.
ANSWER----1.(Victor Hugo)    2.(Jean Valjean)    3.(A loaf of bread)    4.(Javert)

**4.**

TOSS-UP SCIENCE
Born in 1824 in Sainte Foy-la-Grande, he studied medicine in Paris. He is famous for his study of physical anthropology, founding a society and a school for it. He is more famous though for his research on aphasia and the speech center of the brain, which is now named for him. For ten points name him.
ANSWER----(Paul **Broca**)

**4.**

BONUS SCIENCE
Answer the following about RNA.
1. For what does it stand.
2. This type of RNA is the most abundant.
3. This type of RNA picks up amino acids in the cytoplasm and brings them to the ribosomes.
4. This type of RNA transmits the code for protein synthesis.
5. The main difference between DNA and RNA is that thymine is replaced in RNA by what nucleotide?
ANSWER---1.(**Ribonucleic Acid**)    2.(**Ribosomal RNA**)    3.(**Messenger RNA**)
              4.(**Transfer RNA**)        5.(**Uracil**)


**5.**

BONUS FINE ARTS
Born on July 28th in 1887 in Blainville, he was the half brother of Jacque Villon. He began to paint in 1908 and produced several canvases in the Fauvist style. He then developed into the Dada and surrealist styles, but after 1915 painted very little, but did continue to work on his masterpiece The Bride Stripped Bare by Her Bachelors. For ten point name this artist of the famous Nude Descending a Staircase.
ANSWER-----(Marcel **Duchamp**)

**5.**

BONUS FINE ARTS
Identify the artist responsible for the following pieces of surrealist art.
1. Premonitions of Civil War.          2. Harlequin's Carnival.          3. The Elephant Celebes.
4. The Castle of Pyrenees.
ANSWER----1.(Salvador **Dali**)    2.(Joan **Miro**)    3.(Max **Ernst**)    4.(Rene **Magritte**)


**6.**

TOSS-UP MATH
A seat on a Ferris wheel is located 20 feet from the axle. If the wheel turns at a rate of 18 degrees per second, then what is the linear speed of the seat in miles per hour?
ANSWER----(**15pi/11 miles per hour**)

**6.**

BONUS MATH
Give any five of the solutions of the equation x raised to the 6th power plus 64 equals zero. Give the answers in standard form.
ANSWER--(**2I, Negative 2I, root 3 minus I, root 3 + I, negative root 3 + I, & negative root 3 minus I**)


**7.**

TOSS-UP SOCIAL STUDIES
Born in Massachusetts, he graduated form Dartmouth college. He later moved to Boston where he practiced law and appeared before the Supreme Court in the cases McCulloch v. Maryland and Gibbons v. Ogden. He served in the House of Representatives off and on from 1827 to 1850 and was one of the greatest orators in American History. For ten points name this man famous for the line "Liberty and union, now and forever, one and inseparable."
ANSWER----(Daniel **Webster**)

**7.**

**BONUS SOCIAL STUDIES**
Identify the following about the first woman in the US Congress.
1. Who was she.                                    2. Which state did she represent.
3. To what political party did she belong.
4. She was the only person in Congress to vote against what war.
ANSWER----1. (Jeanette **Rankin**)     2.(**Wyoming**)     3.(**Republican**)     4.(**World War I**)

Montana

**8.**

**TOSS-UP LITERATURE**
He won an American Book Award in 1986 for his novel World's Fair, but this Kenyon College graduate is
most famous for his novel inspired by the execution of Julius and Ethel Rosenburg. For ten points name
this author whose first novel Welcome to Hard Times would not bring him as such success as his later
works Ragtime and The Book of Daniel.
ANSWER----(E.L. **Doctorow**)

**8.**

**BONUS LITERATURE**
Given a title name the author.
1. Beyond Good and Evil.          2. Ars Poetica.          3. Fathers and Sons.
4. The Emperor's New Clothes.
ANSWER----1.(Friedrick **Nietzsche**)     2.(**Horace**)     3.(Ivan **Turgenev**) 4.(Hans C. **Andersen**)

**9.**

**TOSS-UP SCIENCE**
He was the first to suggest that the biology of extinct species could be recreated by working back from the
differences in the molecules of similarly related organisms and was also the first to devise the electro-
negativity scale. For ten points name this scientist who was awarded a Nobel Prize in Peace and another
in Chemistry for his life's work.
ANSWER----(Linus **Pauling**)

**9.**

**BONUS SCIENCE**
Identify the following compounds all of which have one carbon in the center bonded to four substituent
atoms.
1. Bonded to four hydrogens, this simplest of the hydrocarbons is an important fuel.
2. Bonded to one hydrogen and three chlorines, this compound is used as a solvent and as an anesthetic.
3. Bonded to two fluorines and two chlorines, this compound is an important coolant in refrigeration
systems.
4. Each carbon is bonded to four other carbons in a huge lattice, in this, the hardest form of carbon.
ANSWER----1.(**Methane** or **Marsh Gas**)     2.(**Chloroform** or **Trichloromethane**)     3.(**Freon**-12)
          4.(**Diamond**)

**10.**

**TOSS-UP MISCELLANEOUS**
Recent studies have shown that veterans suffering from this disorder, which is a prolonged response to an
event outside the range of normal experiences and includes flashbacks, nightmares, and sense of
numbness, have a much lower general health level than non-affected veterans. For ten points name this
disorder often abbreviated PTS.
ANSWER----(**Post-Traumatic Stress** Disorder)

## 10.

**BONUS MISCELLANEOUS**
Answer the following questions about new airplanes and their development.
1. Name the company who newest plane is currently undergoing a period of rigorous testing before going into service as the next twin engine commercial jetliner.
2. Give the 700 series designation of this new plane.
3. The effects of air pressure on airplane models are tested in this chamber through which air is forced at high velocity.
4. One of the most common places to test new aircraft is NASA's Ames Research Center which has the world's largest type of device named in part three, which can accommodate a full-sized 737. In what state is this center located.
ANSWER----1.(**Boeing**)     2.(**777**)     3.(**Wind Tunnel**)     4.(**Iowa**)

# Half-Time

## 11.

**TOSS-UP FINE ARTS**
Generally consisting of three parts, the exposition, the development and the recapitulation, it can also include an introduction and a coda. Although Haydn, Mozart and Beethoven never called this form by its current name, they made it famous. For ten points name this musical form which includes such pieces as Chopin's Funeral March and Beethoven's Moonlight.
ANSWER----(**Sonata**)

## 11.

**BONUS FINE ARTS**
Identify the composer of the following works.
1. South Pacific.            2. White Christmas.            3. Onward, Christian Soldiers.
4. Jeanie With the Light Brown Hair.
ANSWER----1.(Richard **Rodgers**)     2.(Irving **Berlin** or Israel **Baline**)     3.(Arthur **Sullivan**)
                4.(Stephen **Foster**)

## 12.

**TOSS-UP SOCIAL STUDIES**
First excavated on the mound of Hissarlik in the 1870's, the remains of nine cities spanning a total three thousand years were discovered. It was probably city seven A, which fell in 1250 BC, that was the real event on which was based the famous myth. For ten points name this city located in Turkey, discovered by Heinrich Schliemann. whose story is told in the Iliad.
ANSWER----(**Troy**)

## 12.

**BONUS SOCIAL STUDIES**
Identify in what country you would find the following major cities.
1. Milan.            2. Newcastle upon Tyne.            3. Tel Aviv.            4. Concepcion.
ANSWER----1.(**Italy**)     2.(**England** or **Great Britain**)     3.(**Israel**)     4.(**Chile**)

## 13.

**TOSS-UP MATH**
What is the measure of the exterior angle of a octagon?
ANSWER----(**45 degrees**)

**13.**

**BONUS MATH**

Calculate the following and give in simplest terms.

1. The area contained in circle A, but not in circle B, if the circles are concentric and circle A has a radius of 17 meters and circle B has a radius of 8 meters.

2. The volume contained in a cube, but not in a right circular cylinder which is inscribed in the cube, if the cube has a edge length of 11 meters.

3. The volume contained in sphere A, but not sphere B if sphere A and B are concentric and they have radii of lengths 9 and 5 respectively.

4. The volume inside a right circular cylinder, but not inside a right circular cone, if the circular cone is inscribed in the circular cylinder, with the same base and if the circular cylinder has a diameter of 28 meters and the cone has a slant height of 25 meters.

ANSWER----1.**(225Pi square meters)**    2.**(1331 minus (1331/4)Pi [332.75Pi] cubic meters)**
            3.**(2416Pi/3 cubic meters)**    4.**(2688Pi cubic meters)**


**14.**

**TOSS-UP LITERATURE**

For ten points what character in the novel The Sign of Four states "When you have eliminated the impossible, whatever remains, however improbable, must be the truth."

ANSWER----(Sherlock **Holmes**)

**14.**

**BONUS LITERATURE**

Identify the author of the following works of English literature which have a woman's name in the title.

1. Jane Eyre.          2. Tess of the D'Ubervilles.          3. Emma.          4. Rebecca.

ANSWER----1.**(Charlotte Bronte)**     2.**(Thomas Hardy)**     3.**(Jane Austen)** 4.**(Daphne du Maurier)**


**15.**

**TOSS-UP SCIENCE**

The discovery of the 1.7 million year old Dmanisi jaw of this species of man in the former Soviet Republic of Georgia has raised questions as to when man migrated out of Africa and when he entered into Europe. For ten points name this hominid species which came after Homo habilis and before Homo sapiens.

ANSWER----(**Homo erectus**)

**15.**

**BONUS SCIENCE**

Answer the following questions about the origins of the human race.

1. Several new studies of the mutations in DNA have determined that the human race probably originated in this continent.

2. By analyzing the mutation rate in this male sex chromosome, it is believed that the human race originated about 270,000 years ago from a small group of male ancestors.

3. By what name this the theory in part two known.

4. The new study also determined that humans are much more genetically similar to each other than gorillas, orangutans or this closest ape relative to man are to their own species' members.

ANSWER----1.**(Africa)**     2.**(Y chromosome)**     3.**(Adam theory)**     4.**(Chimpanzee)**

**16.**

**TOSS-UP SOCIAL STUDIES**

After the death of his wife from an insect sting he immersed himself in his military career. His resume includes commander of the British 8th army in North Africa, Commander-in-Chief of the ground forces during the Normandy invasion and Deputy Supreme Commander of NATO. For ten points name this Field Marshal who was the victor at the Battle of El Alamein.

ANSWER----(Bernard **Law** or 1st Viscount **Montgomery** of Alamein)

## 16.

**BONUS SOCIAL STUDIES**

Answer the following questions about the aftermath of World War two in southeast Asia.

1. Armed by the Japanese, this nationalist movement of Vietnam used guerrilla tactics to drive the French out of French Indochina by 1955.

2. + 3. From 1948 to 1950, China was involved in a civil war pitting this man's Communist forces against this man's Nationalist forces.

4. The British pulled out of the area in 1948 when they agreed to allow this country to become self-governed on the condition that a communist government would not be installed.

ANSWER----1.(Viet Minh or League for the Independence of Vietnam)

2 + 3.(Mao Tse-Tung or Mao Zedong and Chang Kai-Shek)     4.(Malaysia)

Viet Cong were their guerilla troops

## 17.

**TOSS-UP MISCELLANEOUS**

The first design for this trophy was made on a napkin, the final product, made out of sterling silver looked exactly the same. For ten points name this trophy which was first awarded to the Green Bay Packers who were the winners of the second Super Bowl and has been given to every winner since.

ANSWER----(Vince Lombardi Trophy)

## 17.

**BONUS MISCELLANEOUS**

Identify the following phrases all of which have a color in them.

1. Taken from the type of ink used to attract the reader's attention, this type of journalism uses sensational and unscrupulous material to sell newspapers.

2. Using the same color as part one, this type of illegal contract prevented an applicant from joining a labor union if he wanted a job.

3. This type of law took its name from the color of the paper it was printed on and prevents shows, sports and business on Sundays.

4. This type of military operation is so secret that even if it is successful nobody must ever acknowledge that it occurred.

ANSWER----1.(Yellow journalism)     2.(Yellow-dog contract)     3.(Blue laws)     4.(Black operation)

## 18.

**TOSS-UP LITERATURE**

Her father was a strict Calvinist who dominated her life. She escaped to the Amherst Institute and Mount Holyoke Female Seminary, but she would return home where she dressed in white and rarely met guests. Her poetry is usually short, consisting of four line stanzas. For ten points who is this poet of "I Never Saw a Moor" and "I Could Not Stop for Death".

ANSWER----(Emily Dickenson)

## 18.

**BONUS LITERATURE**

Given the setting of a Shakespearean play name it.

1. The forest of Arden.     2. Ephesus.     3. Navarre, Spain.     4. During the Trojan War.

ANSWER----1.(As You Like It)          2.(The Comedy of Errors or Pericles, Prince of Tyre)
3.(Love's Labour's Lost)     4.(Troilus and Cressida)

## 19.

**TOSS-UP SCIENCE**

Nicknamed Le Grande K, it is lying in Sevres, France in the International Bureau of Weights and Measures, sealed in an airtight bell jar and is made of a platinum-iridium alloy. Because of outgassing and dirt accumulation on it, scientists wish to redefine it as a function of Avogadro's constant. For ten points name this unit of the metric system.

ANSWER----(**Kilogram**)

## 19.

**BONUS SCIENCE**

Physical Review recently released a book containing what it felt were the most important papers it had published in its one hundred years. Answer these questions about some of their choices.

1. His 1913 paper announced that by performing an oil-drop experiment he had calculated the charge on an electron.

2. In 1925 Clinton Davisson and Lester Germer published their historic paper announcing that this tiny negatively charged particle would behave as a wave under certain conditions.

3. In 1948 in one of the most important discoveries of the 20th century, John Bardeen and Walter Brattain announced their invention of this device.

4. Richard Feynman's 1949 paper on using a spacetime approach to study this science abbreviated QED also appeared in the Physical Review.

ANSWER----1.(Robert **Millikan**)    2.(**Electron**)    3.(**Transistor**)    4.(**Quantum Electrodynamics**)

## 20.

**TOSS-UP MATH**

What is the decimal form of the octal number 1071?

ANSWER----(**569**)

## 20.

**BONUS MATH**

Identify the area of mathematics with which each of the following men are most famously associated.

1. Sir Isaac Newton.          2. Pierre de Fermat.          3. Euclid.          4. August Mobius.

ANSWER----1.(**Calculus**)    2.(**Analytical Geometry**)    3.(**Geometry**)    4.(**Topology**)

## 21.

**TOSS-UP LITERATURE**

He, like Hemingway, worked for an ambulance service during WWI. He would use his experiences as the basis for his first novel One Man's Initiation. He would go on to experiment with stream of consciousness writing in his next book The Manhattan Transfer before turning his attention to writing two trilogies. For ten points name this author of the trilogies District of Columbia and USA.

ANSWER----(John **Dos Passos**)

## 21.

**BONUS LITERATURE**

Given a list of pronouns state what type they are.

1. This, that, those.          2. Myself, yourself, himself.          3. Which, whose, whom.
4. What, whoever, whatever.

ANSWER----1.(**Demonstrative**)    2.(**Reflexive**)    3.(**Relative**)    4.(**Interrogative**)

## 22.

**TOSS-UP MATH**

Tseng Labs Et 4000, Diamond Stealth , Matrox Millennium, #9 Imagine 128, ATI Mach 64 and Cirrus Logic are all what type of computer components which transfer and process data from the computer to the monitor.

ANSWER----(**Video Cards**)

**22.**

**BONUS MATH**
Identify the following terms in computer science given a description.
1. The process of searching for errors in a program.
2. A program designed to convert symbolic instructions into a form suitable for execution on a computer.
3. The process of reserving storage space for a program's arrays.
4. A table listing statements concerning an event and their respective truth values.
ANSWER----1.(**Debugging**)  2.(**Assembler**)  3.(**Dimensioning**)  4.(**Truth Table**)

**23.**

**TOSS-UP SCIENCE**
Because its main antenna is disabled, this spacecraft is unable to relay its data back to earth as fast as NASA had hoped so the Hubble Space Telescope will be used to scout out features on Callisto and Ganymede for it to study. For ten points name this probe studying Jupiter which was named after a famous Italian scientist.
ANSWER----(**Galileo**)

**23.**

**BONUS SCIENCE**
Answer the following questions about some of planned joint space mission between the United States and Russia.
1. In this 1998 project, a Russian craft will launch a US orbiter, the Mars Global Surveyor, which will travel to Mars and land a Russian rover on the surface. Name this mission.
2. Another mission known as ICE will send two US spacecrafts carrying Russian probes to study this cold planet and its moon Charon.
3. The final mission, known as FIRE, is to send a US and a Russian craft close enough to simultaneously study this outer atmospheric layer of the sun and the solar wind.
ANSWER----1.(**Mars Together**)  2.(**Pluto**)  3.(**Corona**)

**24.**

**TOSS-UP SOCIAL STUDIES**
Thucydides stated that, "the truest explanation, though the one least mentioned, was the great growth of Athenian power and the fear it caused the Spartans, which drove them to war." For ten points this is the explanation supplied by one historian for this war between the Delian League of Athens and the city of Sparta and her allies.
ANSWER----(**Peloponnesian** War)

**24.**

**BONUS SOCIAL STUDIES**
In May, 1995, Jacques Chirac became the fifth man elected to the position of the presidency of the fifth republic of France. For five points each name the other four men to hold the post.
ANSWER----(Charles **de Gaulle**, Georges **Pompidou**, Giscard **d'Estaing** and Francois **Mitterand**)

## *Replacement Questions*

**TOSS-UP MATH**
What is the 4$^{th}$ term of the binomial expansion of the quantity 2X plus 2Y raised to the sixth power?
ANSWER-----(**128x cubed y cubed**)

**BONUS MATH**
Identify the name given to a polygon with each of the following number of sides.
1. 6 sides.        2. 8 sides.        3. 9 sides.        4. 12 sides.
ANSWER----1.(**Hexagon**)  2.(**Octagon**)  3.(**Nonagon**)  4.(**Dodecagon**)

**TOSS-UP SCIENCE**
A notochord, a dorsal nerve chord and gill slits or clefts are all characteristics of which phylum of animals?
ANSWER----(**Chordata** or **Chordates**)

**BONUS SCIENCE**
Identify the following geological formations in Italy.
1. This volcano on the mainland near Naples first erupted in 79 destroying Pompeii and continued regularly until its last outpouring in 1944.
2. Europe's largest active volcano, this Sicilian peak has over two hundred cones and had a major eruption in 1971.
3. A member of the Aeolian islands northeast of Sicily, this volcanic island is now dormant and has two major peaks, Serra Vancura and La Cima.
ANSWER----1.(**Vesuvius** or **Vesuvio**)      2.(**Aetna** or **Etna**)      3.(**Stromboli**)

**TOSS-UP SOCIAL STUDIES**
Outlawed by the Taft-Hartley Act of 1947, this type of agreement requires all employees to join and remain in the good standing of a union as a condition of employment. For ten points what name is given to this type of agreement.
ANSWER----(**Closed-shop** Agreement)

**BONUS SOCIAL STUDIES**
I will give you the name of a person who signed the Declaration of Independence and you tell me which state they were representing.
1. Roger Sherman.            2. Benjamin Franklin.            3. Samuel Chase.        4. Edward Rutledge.
ANSWER----1.(**Connecticut**)      2.(**Pennsylvania**)      3.(**Maryland**)      4.(**South Carolina**)

**TOSS-UP LITERATURE**
This author served in the Confederate Army during the Civil War. After the war he became the first flutist with the Peabody Symphony Orchestra in Baltimore, but this did not stop him from pursuing a writing career. He wrote the poem "The Symphony" and the novel Tiger Lillies. For ten points name the author of The Marshes of the Glynn and The Song of the Chattahoochee.
ANSWER----(Sidney **Lanier**)

**BONUS LITERATURE**
I'll give you an Irving Stone work and you tell me the person it is about.
1. Lust for Life.                  2. The Agony and the Ecstasy.                  3. The Origin.
ANSWER----1.(Vincent **Van Gogh**)      2.(**Michelangelo**)      3.(Charles **Darwin**)