

ABT OPEN 1995 Round 1

Questions written and edited by
TRIAD QUESTIONS

1.

TOSS-UP MATH

For ten points what is the difference between the cube of 11 and the square of 7?

ANSWER----(1282)

1.

BONUS MATH

Give the result of each of the following in simplest terms.

1. The quantity $\frac{3}{5} + \frac{4}{6}$ quantity closed divided by $\frac{2}{15}$

2. The quantity $\frac{1}{2} + \frac{4}{7} - \frac{1}{4}$ quantity closed times $\frac{4}{7}$

3. Seven eighths squared times 8 thirds times $\frac{16}{13}$

4. The quantity $\frac{7}{9} + \frac{5}{8}$ quantity closed divided by $\frac{11}{16}$

ANSWERS---1. ($\frac{19}{2}$ or $9 \frac{1}{2}$) 2. ($\frac{23}{49}$) 3. ($\frac{98}{39}$) 4. ($\frac{202}{99}$ or $2 \frac{4}{99}$)

2.

TOSS-UP FINE ARTS

The artist responsible for this monumental work did not even want to paint it, but was forced to by the Pope, thus interrupting his work on the tomb of Julius II. That might explain why it only took him 4 years, from 1508 to 1512, to paint it. The central part, which is divided by five girders, contains nine scenes from Genesis from the Creation of the World to the Drunkenness of Noah. For ten points name this monumental achievement by Michelangelo.

ANSWER----(Sistine Chapel Ceiling)

2.

BONUS FINE ARTS

Identify the style or movement to which each of the following artists belonged to in their mature phase.

1. Willem de Kooning

2. Jean-Antoine Watteau [Va-toh]

3. Paul Gauguin

4. Hieronymus Bosch

ANSWERS----1. (Abstract Expressionism) 2. (Rococo) 3. (Post-Impressionism)
4. (Gothic)

3.

TOSS-UP LITERATURE

This genre of writing was associated with the magazine "Black Mask". Known for the depiction of cruelty and bloodshed at close range, among its practitioners were Dashiell Hammett and James Cain. For ten points name this type of fiction which can also serve as an adjective for an egg.

ANSWER---(Hard Boiled Fiction)

3.

BONUS LITERATURE

Given a character from a work by Charles Dickens, name the work.

1. Jack Dawkins.

2. Lucie Mannet [Man-ney].

3. Uriah Heep.

4. Marley.

ANSWERS--1. (Oliver Twist) 2. (A Tale of Two Cities) 3. (David Copperfield)
4. (A Christmas Carol)

4.

TOSS-UP SOCIAL STUDIES

The first state to re-institute the chain gang, it was settled by the French at Mobile in 1711. Partly acquired through the Louisiana Purchase, major cities include Selma, Huntsville, Birmingham and Montgomery. For ten points name this state known as the Camellia State or the Heart of Dixie.

ANSWER—(Alabama)

4.

BONUS SOCIAL STUDIES

Identify some of the most popular manmade attractions in the United States from a description.

1. This bridge is named after the channel it crosses which connects San Francisco Bay with the Pacific Ocean.
2. George Washington, Thomas Jefferson, Abraham Lincoln and Teddy Roosevelt can be seen at this South Dakota spot.
3. This site designed by Eero Saarinen is found in St. Louis.
4. Formerly known as Boulder Dam, this site sits on the Colorado river in Arizona.

ANSWER—1.(Golden Gate Bridge) 2.(Mount Rushmore) 3.(Gateway Arch) 4.(Hoover Dam)

5.

TOSS-UP SCIENCE

First discovered by Frederick Soddy, Francis Aston invented the mass spectrograph to study them. Later Rudolf Schoenheimer became the first to use them to label compounds so that molecules could be studied as they traveled through the body. For ten points name these elements that have the same number of protons but different numbers of neutrons.

ANSWER—(Isotopes)

5.

BONUS SCIENCE

Identify the following about substances found in the air.

1. This is the term applied to any tiny particle in the dispersed air, whether it be liquid or solid.
2. Solid particles which are caused by grinding or crushing are called this and can often be found settled out around the house.
3. This type of solid particle is formed when vapors condense.
4. This term is derived from smoke and fog, and now applies to air pollution in general and is especially prevalent in the Los Angeles area.

ANSWER—1.(Aerosol) 2.(Dust) 3.(Fume) 4.(Smog)

6.

TOSS-UP MISCELLANEOUS

Removed from the statue of a Hindu goddess, it was given to Louis XIV who then died of smallpox, Louis XV and Marie Antoinette then wore it and both of them lost their heads in the Revolution. For ten points name this supposedly cursed, largest blue diamond in the world which currently resides in the Smithsonian.

ANSWER—(Hope diamond)

6.

BONUS MISCELLANEOUS

The English language is always undergoing changes, and what was common four hundred years ago can now be hard to understand. Identify what these Old English words mean now.

1. Gramercy.
2. Ye.
3. Divers.
4. Smidgen.

ANSWER—1.(Thank you or Many thanks) 2.(You) 3.(Many) 4.(Small accept equivalent)

7.

TOSS-UP MATH

What are all the real solutions to the equation $X^3 + X^2 = 0$?

ANSWER—(0 or Negative 1)

7.

BONUS MATH

Give the first derivative of each of the following.

1. Thirteen.
2. $7X$ to the fifth plus $6X^3$ plus $14X^2$ plus $5X$.
3. $4X$ to fourth plus $3X^3$ minus 6 times X raised to the negative second power.
4. The quantity $2x$ plus 1 cubed.

ANSWERS—1. (0) 2. $(35X^4 + 18X^2 + 28X + 5)$
3. $(16X^4 + 9X^2 + 12X)$ raised to the negative third power
4. $(6 \text{ times the quantity } 2X \text{ plus } 1 \text{ squared or } 24X^2 + 24X + 6)$

8.

TOSS-UP LITERATURE

He wrote biographies of Mark Twain, Vachel Lindsey and Walt Whitman, as well as a biography of Abraham Lincoln titled Lincoln, the Man. He is best remembered, however, for his book which gave a realistic picture of village life in the Middle West. For ten points name this man whose autobiography is titled Across Spoon River.

ANSWER—(Edgar Lee Masters)

8.

BONUS LITERATURE

There were three Knights of the Round Table that were allowed to see the Holy Grail. Name them.

ANSWERS—(Sir Bors, Sir Percival and Sir Galahad)

9.

TOSS-UP SCIENCE

Their inner layer contains collar cells. Water is drawn in their bodies through small incurrent pores and expelled through a large excurrent pore called the osculum. Most maintain a definite shape because of spicules and they reproduce using gemmules. For ten points name these organisms, the only members of the phylum Porifera.

ANSWER—(Sponges)

9.

BONUS SCIENCE

Identify the name given to each of the following biological terms.

1. This is the general name given to sexual reproductive cells.
2. This is the name given to the fusion of two different sexual reproductive cells.
3. This is the cell produced by the fusion of two sexual reproductive cells.
4. When the egg forms, one haploid cell gets most of the cytoplasm and then develops into the mature egg. Name this cell.

ANSWER—1. (Gametes) 2. (Fertilization) 3. (Zygote) 4. (Ootid)

10.

TOSS-UP SOCIAL STUDIES

He practiced law in London but in 1630 came to Salem to serve as governor of the Massachusetts Bay Colony. In 1643 he became the first president of the New England Confederacy. For ten points name this man also well known for his two volume work The History of New England.

ANSWER—(John Winthrop)

10.

BONUS SOCIAL STUDIES

Answer the following questions about the US Constitution.

1. How many articles does it contain?
2. Which article deals with amending the constitution?
3. Which article deal with relations among the states?
4. Which article deals with the executive branch?

ANSWERS---1.(7) 2.(5th) 3. (4th) 4. (2nd)

Half-Time

11.

TOSS-UP LITERATURE

A member of the Lord Chamberlain's Men, which became the King's Men in 1603, he was best known during his life for the poems Venus and Adonis and The Rape of Lucrece. The father of three children, Susanna, Hamnet and Judith by Anne Hathaway, his family eventually settled down at New Place in Stratford. For ten points name this playwright who wrote Titus Andronicus and A Midsummer Night's Dream.

ANSWER---(William Shakespeare)

11.

BONUS LITERATURE

Given a famous line from a work name the British author.

1. Into the valley of death rode the six hundred.
2. Shall I compare thee to a summer's day.
3. To err is human, to forgive divine.
4. O wind, if winter comes can spring be far behind.

ANSWER---1.(Alfred, Lord Tennyson) 2.(William Shakespeare) 3.(Alexander Pope)
4.(Percy Shelley)

12.

TOSS-UP SCIENCE

While studying the electron using relativistic wave mechanics, Paul Dirac found that the energy content of an electron could either be positive or negative. He reasoned that a particle with an opposite charge must exist, and several years later Carl Anderson found it. For ten points name this anti-electron.

ANSWER---(Positron or Positon)

12.

BONUS SCIENCE

There are many unfamiliar units of measure that are not commonly used, answer these questions about some of the metric ones.

1. A Sverdrup is a unit of volume transport equal to one million of these units per second.
2. A Jansky is a unit that measures the power received at a telescope from a cosmic radio source. It is equal to ten to the negative twenty-sixth of this unit of power per square meter per hertz per source.
3. This unit of radiation, equal to one million disintegrating atoms per second, is named after the man who discovered the proton.
4. The lambda is a unit of volume equal to ten to the negative sixth what.

ANSWER---1.(Cubic meters) 2.(Watt) 3.(Rutherford) 4.(Liters)

13.

TOSS-UP FINE ARTS

Translated into musical notation, this composer's last name is B-flat, A, C and B-natural and has been used as a theme in works by Schumann, Reger, Liszt and the composer himself in his Toccata in F. For ten points name this organ composer known for his works The Well-Tempered Clavier and The Art of Fugue.

ANSWER----(Johann Sebastian Bach)

13.

BONUS FINE ARTS

Identify the following types or movements of music.

1. Popular from 1890 to 1920, this style is characterized by strong syncopation in even time and was popularized by Scott Joplin.
2. Short for ragamuffin, this form of music is Jamaican in origin and was strongly influenced by Calypso.
3. Sharing its name with a type of hot sauce, this movement is Cuban in origin but soon merged with jazz while retaining its distinctive rhythm.
4. The predecessor to rock and roll, it combined the melodic features of the blues with electric guitars and keyboards.

ANSWER----1.(Ragtime) 2.(Reggae) 3.(Salsa) 4.(Rhythm and Blues)

14.

TOSS-UP SOCIAL STUDIES

Located offshore from Cadiz at the western end of the Strait of Gibraltar, the thirty-three ships of Pierre Villeneuve were attacked and defeated by two columns of British ships commanded by Cuthbert Collingwood and Horatio Nelson. For ten points name this 1805 battle which ended Napoleon's hope to invade England.

ANSWER----(Battle of Trafalgar)

14.

BONUS SOCIAL STUDIES

Japan has always had hundreds of religions, but in the late nineteenth century an effort was made to unite the Japanese into one religion with the emperor at its head. Answer the following related questions.

1. Name this animistic religion which is still practiced that worships nature and deceased ancestors.
2. Name the Japanese Emperor who renounced his divinity at the end of the second world war on orders from the Allied Command.
3. The end of the Emperor's divinity allowed many messiahs and new cults to spring up, the largest being Soka Gakkai, a sect of this religion which was originally founded by Siddhartha.
4. Led by Shoko Asahara, this cult is the best known because of its Sarin attack on a Tokyo subway.

ANSWER----1.(Shinto) 2.(Hirohito) 3.(Buddhism) 4.(Supreme Truth or Aum Shinri)

15.

TOSS-UP MATH

Given the parabola y equals x squared plus 4, if line segments are drawn from the point where x equals 4 to the origin and the x axis, then what is the area of the triangle that is formed between the x axis and the line segments?

ANSWER----(40)

15.

BONUS MATH

Calculate the areas of the following.

1. Given two concentric circles with radii of 5 and 16 feet, the area inside the larger circle, but outside the smaller circle.
2. The area of a trapezoid with bases of 8 and 14 feet and a height of 9 feet.
3. The area of a hexagon with a side of length 12 meters.
4. Given a circle with a radius of 15 feet and a square inscribed in it, what is the area contained in the circle but not in the square?

ANSWERS---1. (231 pi square feet) 2. (99 square feet) 3. (216 root 3 square meters)
4. (225 pi minus 450 square feet)

16.

TOSS-UP MISCELLANEOUS

She had bit roles in "The Asphalt Jungle" and "All About Eve" before landing her first starring role in "Gentlemen Prefer Blondes". She was married twice, once to Arthur Miller and once to Joe Dimaggio. For ten points name this actress who starred in the films "Bus Stop", "Some Like It Hot" and "The Misfits".

ANSWER--(Marilyn Monroe)

16.

BONUS MISCELLANEOUS

Name the four longest running Broadway musicals of all time.

ANSWERS--(Cats, Oh Calcutta, A Chorus Line and 42nd Street)

17.

TOSS-UP LITERATURE

His pen name comes from slang meaning two fathoms deep. He worked for Bret Harte before launching his own writing career and marrying Olivia Langdon. For ten points name this man who wrote the works Personal Recollections of Joan of Arc and The Prince and the Pauper.

ANSWER--(Mark Twain or Samuel Clemens)

17.

BONUS LITERATURE

Given a description of a literary term name it.

1. A description or depiction of God in a human image.
2. A long narrative poem dealing with a heroic character.
3. A form of drama used to excite through exaggeration.
4. A Japanese verse form of three lines.

ANSWERS---1. (Anthropomorphism) 2. (Epic) 3. (Farce) 4. (Haiku)

18.

TOSS-UP SCIENCE

While walking home from his father's laboratory on November 11, 1572 he looked up and spotted a new star in the constellation Cassiopeia. He rushed home and began studying it, and became the most famous astronomer of his generation. For ten points name this Danish nobleman who wrote the book De Nova Stella about this supernova.

ANSWER---(Tycho or Tycho Brahe)

18.

BONUS SCIENCE

Answer the following questions about the Soviet exploration of space.

1. The main launching center for Soviet rockets is Baikonur Cosmodrome, in what former Asian Soviet Republic is this center located.
2. Valery Polyakov set a record by remaining in space for 437 days aboard this space station.
3. In 1961 he traveled aboard Vostok I to become the first man in space.
4. The Soviet's were also the first to place an animal in space, a dog named this.

ANSWER---1. (Kazakhstan) 2. (Mir) 3. (Yuri Gagarin) 4. (Laika)

19.

TOSS-UP SOCIAL STUDIES

Originally inhabited by the Leleges and the Pelasgoi, latter inhabitants included the Dorians, Achaeans, Ionians and the Hellenes, who all migrated down from the Russian steppe into this rocky land. For ten points name this country which is considered the founder of western culture.

ANSWER---(Greece)

19.

BONUS SOCIAL STUDIES

Identify the following cities of Morocco from a description.

1. Located at the mouth of the Bou Regreg, it is the capital of Morocco.
2. Made famous in a Humphrey Bogart movie, this seaport handles three quarters of Morocco's trade.
3. Best known from the name it gave to a type of hat, it is the oldest of Morocco's four imperial cities.
4. The second largest city in Morocco, it is located in the foothills of the Atlas Mountains.

ANSWER---1. (Rabat) 2. (Casablanca) 3. (Fez or Fes) 4. (Marrakesh)

20.

TOSS-UP MATH

In simplest form what is the sum of the tangent of 30 degrees, the cosine of 30 degrees and the sine of 30 degrees?

ANSWER---(Five sixths times the square root of 3 plus one half)

20.

BONUS MATH

Give the exact values of each of the following.

1. Sine 120 degrees.
2. Cosine of negative 90 degrees.
3. The tangent of 120 degrees.
4. Sine of 300 degrees.
5. Cosecant of 240 degrees.

ANSWERS---1. (Root 3 divided by 2) 2. (0) 3. (Negative root 3)
4. (Negative root 3 divided by 2) 5. (Negative 2 times root 3 divided by 3)

Replacement Questions

TOSS-UP MATH

What is the solution to the equation six N minus 27 equals 135?

ANSWER---(27)

BONUS MATH

Evaluate each of the following, and give answers in simplest form.

1. 2 raised to the negative eighth power.
2. 5 cubed plus 7 cubed.
3. The quantity 6 squared plus 7 squared plus 8 squared plus 20 quantity closed times 13.
4. The quantity 8 cubed minus 5 to the fourth quantity closed times 3.
5. The quantity 4 cubed minus 6 squared divided by 3 raised to the negative second power.

ANSWERS---1. (1/256) 2. (468) 3. (2197) 4. (Negative 339) 5. (252)

TOSS-UP SOCIAL STUDIES

These rules regulating personal and public contract were named for the color of paper they were printed on. They originated in Virginia in 1624 and controlled such things as activity on the Sabbath and personal clothing. For ten points names these rules.

ANSWER----(Blue Laws)

BONUS SOCIAL STUDIES

Given a definition, give the legal term.

1. An agreement between two or more persons to defraud persons or institutions of their legal rights.
2. Disobedience or disrespectful conduct in the presence of any court or legal body.
3. Defamation in writing.
4. Oral defamation.

ANSWERS----1. (Collusion) 2. (Contempt) 3. (Libel) 4. (Slander)

TOSS-UP LITERATURE

He was the editor of the "Southern Review" and his southern upbringing helped develop his liberal voice in such works as Who Speaks for the Negro? and Homage to Theodore Drieser. His winning of two Pulitzer Prizes for Poetry may explain why he was selected as the first Poet Laureate of the US. For ten points name this author of All the King's Men.

ANSWER--(Robert Penn Warren)

BONUS LITERATURE

Given a work name the author.

1. A Clockwork Orange.
2. Erewhon.
3. Don Juan.
4. The Elder Statesman.

ANSWERS----1. (Anthony Burgess) 2. (Samuel Butler) 3. (Lord Byron) 4. (T.S. Eliot)

TOSS-UP SCIENCE

Adolph, Barbara, Cosme, Dalila, Erick, Flossie, Gil, Henriette, Ismael, Juliette, Kiko, Lorena, Manuel, Narda, Priscilla, Raymond, Sonia, Tico, Velma, Wallis, Xina, York and Zelda. For ten points these are the names approved for use in the eastern northern Pacific Ocean for what weather phenomenon.

ANSWER----(Hurricanes or Tropical Storms)

BONUS SCIENCE

Jean-Marie Chauvet's discovery of a cave containing hundreds of paintings done by 20,000 year old Cro-Magnons has brought attention to these remarkable drawings. Answer the following questions.

- 1 + 2. These two neighboring European countries contain the best known examples of cave paintings, including the ones above as well as previous known sites such as Altamira and Combe d'Arc.
3. The new discovery rivals this most famous cave site in the region that was accidentally discovered nearly fifty years ago.
4. The idea that these sites are the first examples of human art are now being challenged with the discovery of a 50,000 year old crayon in Death Adder Gorge in this country's outback.

ANSWER----1 + 2. (France and Spain) 3. (Lascaux [Las-col]) 4. (Australia)