

# Illinois Coaches Association

## 1996 Tournament Round 6

### TRIAD QUESTIONS

1.

#### TOSS-UP MATH

What is the simplest result when 4 raised to the 4<sup>th</sup> power is added to 3 cubed and then 6 is added to the sum and lastly the principal square root of that result is taken.

ANSWER—(17)

1.

#### BONUS MATH

Give the position function F of X equals 9t cubed plus 6t squared plus 8t, answer the following?

1. What is the velocity function?
2. What is the acceleration function?
3. What is the jerk function?

ANSWER—1. (27t squared plus 12t plus 8)      2. (54t plus 12)      3. (54)

2.

#### TOSS-UP LITERATURE

After contributing to both The Dial and The Pioneer magazines, this author became the first editor of The Atlantic Monthly. He is best known for leading the American school of letters through his works The Vision of Sir Launfal and The Biglow Papers. For ten points name this author of A Fable for Critics.

ANSWER—(James Russell Lowell)

2.

#### BONUS LITERATURE

Identify the three moods that modern English verbs can take.

ANSWER—(Imperative, indicative and subjunctive)

3.

#### TOSS-UP SCIENCE

The Orloff, the English Dresden, the Star of South Africa, the Pasha of Egypt, the Grand Mogul, the Cullinan which yielded 105, and the Hope. For ten points these are the most famous examples of what hardest known gemstone.

ANSWER—(Diamonds)

3.

#### BONUS SCIENCE

Answer the following questions about electrical phenomenon in the atmosphere.

1. A handy way to figure out how many miles away a lightning strike was is to take the time in seconds between the flash of lightning and this, and then divide by five.
2. The reason for the cause of lightning is a difference in charge, but how that difference occurs is not fully known. It is believed that when this compound freezes into different shapes, the slivers are carried on updrafts and the hail is carried down and they interact and impart charges to each other.
3. While 80 percent of lightning involves intracloud discharges, the more familiar ground strikes occur when a luminous channel of free electrons, known as this, forms and descends in 150-foot steps towards the ground where it is met by an upward electron stream which causes the return stroke.

ANSWER—1. (Thunder)      2. (Water or Ice)      3. (Step leader)

4.

**TOSS-UP SOCIAL STUDIES**

In his three voyages he captained the Endeavour, the Resolution, the Adventure and the Discovery. During the last voyage, while he was trying to prevent the theft of his cutter by the natives, he was dismembered and returned in two parcels to his crew. For ten points name this British mariner who was the first or second to European to visit New Zealand, Tahiti, Fiji, Hawaii and Easter Island.

ANSWER—(Captain James Cook)

4.

**BONUS SOCIAL STUDIES**

Identify the following castles and palaces of Great Britain.

1. Designed by John Nash for George IV on the site of his parent's house, this 600-room London residence of the British monarch remained little used until the accession of Queen Victoria.
2. Given its nickname by Punch magazine, this iron-framed, prefabricated, glass building was designed by Sir Joseph Paxton to house the Great Exhibition of 1851 in Hyde Park.
3. The largest castle in England, it is located on the Thames River in Berkshire. Founded by William I as a fortress, Henry I was the first monarch to use it as his royal residence.
4. Built in 16th century Edinburgh, it was redesigned by Sir William Bruce in the 1670's and now serves as the official residence when the monarch is in Scotland.

ANSWER—1.(Buckingham Palace)    2.(Crystal Palace)    3.(Windsor Castle)  
4.(Holyrood House)

5.

**TOSS-UP FINE ARTS**

He studied one year under Ghirlandiaio and supposedly learned sculpture from Bertoldo, a former pupil of Donatello. Some of this earliest works include Madonna of the Stairs and Battle of the Centaurs and his last work was the unfinished Rondanini Pieta which he was working on six days before his death. For ten points name this great Renaissance master responsible for The Last Judgment 1534-1541.

ANSWER—(Michelangelo Bounarroti)

5.

**BONUS FINE ARTS**

Identify the following terms for the three basic types of print techniques.

1. This is the term for any technique in which the parts of a plate or block that will take ink are incised.
2. From the Italian work for "to raise", this is the technique in which the background is cut away, usually by protecting certain parts with an acid resisting varnish and then the unprotected part of the plate is eaten away by acid. The protective part then stands out above the unprotected part.
3. Invented in 1798 by Aloys Senefelder, this technique is based on the antipathy of grease and water, with the design being drawn with a greasy crayon on a slab of stone. The stone is then chemically fixed and the stone is wetted and rolled with oily ink.

ANSWER—1.(Intaglio)    2.(Relief)    3.(Lithography)

6.

**TOSS-UP MISCELLANEOUS**

Found on the long arm of the X chromosome, the gene for congenital generalized hypertrichosis is probably the cause of the legends of this creature which is also known as a lycanthrope. For ten points name this creature that can only be killed by a silver bullet, which is a human that can assume the shape of a wolf.

ANSWER—(Werewolf or Werwolf)

6.

**BONUS MISCELLANEOUS**

Given the country, give the name of that country's training academy for the army.

1. United States.            2. Great Britain.            3. France.

ANSWER—1. (West Point)    2. (Sandhurst)    3. (Ecole de Saint Cyr)

7.

**TOSS-UP SCIENCE**

Recent observations by the Hubble Telescope have shown that Saturn has them as well, though they are found only directly above the poles. Caused by the planetary magnetic field which traps solar wind particles, the light is due to impacts with atmospheric particles. For ten points name this phenomenon which are known as the australis in the south, and borealis in the north.

ANSWER—(Auroras)

7.

**BONUS SCIENCE**

Answer the following questions about the founding of the science of meteoritics.

1. The idea of objects falling from the sky was strongly resisted due to the statement by this scientist best known for his work on gravity that "to make way for the regular and lasting motions of the planets...it's necessary to empty the heavens of all matter."
2. The science was founded when a well observed shower occurred on June 16, 1794 in Siena, in this southern European country.
3. Although numerous people saw the strike, most scientists ridiculed the idea for the next eight years. One of the few supporter's was this German best known for his star paradox who believed that it was caused by lunar volcanoes.
4. The idea of meteors was finally accepted when scientists witnessed another prominent strike that occurred in 1803 at L'Aigle in the Normandy province of this country.

ANSWER—1. (Isaac Newton)    2. (Italy)    3. (Heinrich Olbers)    4. (France)

8.

**TOSS-UP LITERATURE**

A sorceress of the goddess Hecate, for the love of a man she betrays her father Aeetes, kills her brother Absyrtus, took forty years off his father's life and helped him steal the golden fleece. For ten points name this woman who was repaid by being put away when Jason desired another woman.

ANSWER—(Medea)

8.

**BONUS LITERATURE**

Answer the following questions relating to the destruction of Troy and the fleeing of the inhabitants to their new homeland.

1. The survivors of Troy were gathered and led by this man who was ordered by the gods to take the people to Italy.
2. After surviving a severe storm, the fleet landed on the territory of these filthy bird women whose leader, Celaeno, cursed them and despoiled their food.
3. When the Trojans landed in Italy, the leader went to visit this prophetess in Cumae who told him of the future of his people and led him on a trip through the underworld to see his father.
4. Name the Italian city which was eventually founded by Romulus and Remus, descendants of the Trojans, which came to rule the western world for several centuries.

ANSWER—1. (Aeneas or Anchises)    2. (Harpies)    3. (The Sibyl or Deiphobe)    4. (Rome)

9.

**TOSS-UP SOCIAL STUDIES**

It proved significant in the election of 1854 and grew out of the Order of the Star-Spangled Banner, a secret association which was formed in 1849 to combat the political influence of foreigners, especially Roman Catholics. For ten points name this party which was officially known as the American Party.

ANSWER—(Know-Nothing party Note: Accept American Party on early buzz)

9.

**BONUS SOCIAL STUDIES**

Identify the amendment to the United States constitution given a description.

1. Outlawed the poll tax.
2. Excessive bail was prohibited.
3. Outlawed lawsuits against the states.
4. Gives the accused the right to assistance of counsel.

ANSWER—1.(24) 2.(8) 3.(11) 4.(6)

10.

**TOSS-UP MATH**

In plane geometry, if a line divides two sides of a triangle proportionally then it must be in what geometric relationship to the third side?

ANSWER—(Parallel)

10.

**BONUS MATH**

Determine the slope of the line determined by the following pairs of points.

1. (1, 2) & (3, 4).
2. (5, 1) & (negative 2, negative 3).
3. (1, 3) & (1, negative 1).
4. (9, 14) & (21, 8).

ANSWER—1.(1) 2.(4/7) 3.(Undefined) 4.(Negative 1/2)

## Half-Time

11.

**TOSS-UP SCIENCE**

Discovered by Julius von Sachs in 1862, these cellular organelles measure about two to five microns across. They have a membranous system which is organized into flattened sacs called thylakoids. The fluid outside these sacs is called stroma and the thylakoids are arranged like stacked poker chips to form structures called grana. For ten points name these organelles only contained in plants, in which photosynthesis takes place.

ANSWER—(Chloroplasts)

11.

**BONUS SCIENCE**

Identify the vein or artery from a description.

1. This blood vessel which has no valves carries oxygenated blood from the lungs to be distributed by the heart.
2. This blood vessel returns blood from the head and neck to the heart.
3. This is the largest vein in the body and is formed by the union of the two common iliac veins.
4. This blood vessel arises from the left ventricle and near its origin it has only two branches, the right and left coronary arteries.

ANSWER—1.(Pulmonary veins) 2.(Jugular veins) 3.(Inferior vena cava)  
4.(Ascending aorta)

12.

**TOSS-UP MATH**

What is the determinant of a matrix with entries row one: 2, negative 7 & 1, row two: 4, 1, & 2, and row three: 6, negative 3 & 3?

ANSWER—(0)

12.

**BONUS MATH**

Divide the following polynomials and express your answer as a polynomial plus a remainder.

1. The quantity  $X$  squared minus 4 divided by  $X$  minus 1.
2. The quantity  $4X$  cubed plus  $5X$  squared minus  $10X$  plus 4 divided by the quantity  $4X$  minus 3.
3. The quantity  $6X$  cubed minus  $3X$  squared plus  $10X$  minus 5 divided by  $X$  squared plus 5.

ANSWER—1. (The quantity  $X$  plus 1 plus negative 3 divided by the quantity  $X$  minus 1)

2. (The quantity  $X$  squared plus  $1/2X$  plus  $17/8$  plus negative  $19/8$  over the quantity  $4X$  minus 3)

3. (The quantity  $6X$  minus 3 plus the quantity  $20X$  plus 10 divided by the quantity  $X$  squared plus 5)

13.

**TOSS-UP LITERATURE**

Gustave von Aschenbach is an artist who prides himself on denying his feelings in pursuit of knowledge. While on a trip to Italy he falls in love with a boy named Tadzio. He follows Tadzio all through the town in a pursuit that borders on obsession until Gustave dies of the plague just as he feels close to the boy. For ten points this is the plot of what Thomas Mann novella.

ANSWER—(Death in Venice)

13.

**BONUS LITERATURE**

Given a subtitle, name the well-known title of the work.

1. A Narrative of 1757.
2. The Whale.
3. Life in the Woods.
4. History as a Novel, the Novel as History.

ANSWER—1. (The Last of the Mohicans)      2. (Moby Dick)      3. (Walden)

4. (Armies of the Night)

14.

**TOSS-UP FINE ARTS**

Based on an Oscar Wilde play, this opera, named after the main female character, describes a famous biblical incident at its climax. Against the wishes of her mother Herodias, this woman agrees to do the Dance of the Seven Veils for King Herod in exchange for the head of John the Baptist on a silver platter. For ten points name this Richard Strauss opera.

ANSWER—(Salome)

**14.**

**BONUS FINE ARTS**

Identify the following operas by Richard Wagner from a description.

1. Containing several real people such as Hans Sachs and Veit Pogner, this work tells how Walther von Stolzing wins a singing contest and thus is able to marry Eva and is made a Mastersinger.
2. The third part of the Ring cycle, this opera named after the title character has the hero kill the dragon Fafnir and the dwarf Mime and claim Brunhilde as his wife.
3. The last opera of the Ring cycle, this opera sees the death of Siegfried, Gunther, Brunhilde and Hagen and the destruction of the Norse gods.
4. Set in the castle of Monsalvat, this opera deals with the struggle for the Holy Grail between Klingsor and Amfortas. At the end of the opera the title character returns much wiser after many years of combat and redeems everyone with the Holy Spear.

ANSWER—1. (The Mastersingers of Nuremberg or Die Meistersing von Nurnburg) 2. (Siegfried)  
3. (Gotterdammerung or The Twilight of the Gods) 4. (Parsifal)

**15.**

**TOSS-UP SOCIAL STUDIES**

In 1926, King Abdul Aziz ibn-Saud conquered the neighboring kingdom of Hejaz and renamed this country Nejd and Hejaz. He soon acquired the neighboring region of Asir and decided to rename the kingdom after himself. For ten points name this modern day, oil-rich country which is still ruled by the same dynasty from its capital at Riyadh.

ANSWER—(Saudi Arabia)

**15.**

**BONUS SOCIAL STUDIES**

Answer the following questions about the life of Winston Churchill.

1. In his third experience in battle, he was serving under this general when he led the famous 'last cavalry charge of the British Empire' at the battle of Omdurman in which the Dervish army of the Khalifa was defeated.
2. His fourth taste of combat occurred during this war in South Africa in 1899. He was captured by the Dutch rebels but managed to escape and returned a hero and was elected to Parliament.
3. He then rose through his party and the cabinet, first as Under Secretary for the Colonies, then President of the Board of Trade, Home Secretary and finally as First Lord of this branch of the military during World War One.
4. While serving as the first lord he helped plan this failed naval invasion of Turkey and was made the political scapegoat by the Asquith government.

ANSWER—1. (Lord Herbert Kitchener) 2. (Second Boer War) 3. (Royal Navy or Admiralty)  
4. (Dardanelles or Gallipoli)

**16.**

**TOSS-UP MISCELLANEOUS**

This woman has held the rank of Ambassador Extraordinary and Plenipotentiary since 1993. Taking over for Edward Perkins, she has come to be recognized as America's voice to the world. For ten points name this woman who is the current U.S. Representative to the United Nations.

ANSWER—(Madeline Albright)

**16.**

**BONUS MISCELLANEOUS**

Given a holiday, tell me the month in which the holiday occurs.

1. Guy Fawkes Day.
2. Labor Day in the U.S.
3. Buddha's birthday in Japan.
4. Father's Day in the U.S.

ANSWER—1. (November) 2. (September) 3. (April) 4. (June)

17.

**TOSS-UP SCIENCE**

One of the first scientific reports written on them was by Abbe Ambrogio Soldani, hence their original name, soldanite. In the paper he concluded that they had congealed when they entered the atmosphere and were not due to volcanoes. For ten points name these objects, often called shooting stars, which impact the earth in groups known as showers.

ANSWER—(Meteors or Meteorites)

17.

**BONUS SCIENCE**

Moderator: Pass out diagram C1.

On the sheet you have there are four organic chemicals, name them using the IUPAC [eye-you-pack] scientific naming system. The example would be 2-methyl-butanal.

ANSWER—1.(Ethane) 2.(2-methyl-propane) 3.(3-methyl-2-butanone or 3-methylbutan-2-one)  
4.(Ethyl ethanoate)

18.

**TOSS-UP LITERATURE**

He was discharged from the merchant marine as a schizoid personality and later in life psychological problems led him to drink heavily and live in seclusion with his mother. His writing was famous for symbolizing the beat movement in American literature. For ten points name this author of the works Big Sur, The Dharma Bums, The Subterraneans and On the Road.

ANSWER—(Jack Kerouac)

18.

**BONUS LITERATURE**

Washington Irving wrote under three pen names. Identify them.

ANSWER—(Geoffrey Crayon, Jonathan Oldstyle and Diedrich Knickerbocker)

19.

**TOSS-UP MATH**

If a sphere has radii that are in a ratio of 5 to 6, then what is the ratio of their volumes.

ANSWER—(125 to 216)

19.

**BONUS MATH**

Give the exact value in radians from 0 to  $2\pi$  inclusive of all the solutions of the following equations.

1. The tangent of X equals the square root of 3.

2. 4 times the sine squared X minus 1 equals 0.

3. The cosecant squared X minus 4 equals 0.

4. 2 times sine squared X minus 3 equals sine of X.

ANSWER—1.( $\frac{\pi}{3}$  &  $\frac{4\pi}{3}$ ) 2.( $\frac{\pi}{6}$ ,  $\frac{5\pi}{6}$ ,  $\frac{7\pi}{6}$  &  $\frac{11\pi}{6}$ )  
3.( $\frac{\pi}{6}$   $\frac{5\pi}{6}$ ,  $\frac{7\pi}{6}$  &  $\frac{11\pi}{6}$ ) 4.( $3\pi$ )

20.

**TOSS-UP SOCIAL STUDIES**

The plan for its defense was the Breda variation of the Dyle plan wherein the forces of Marshall Gamelin would hold a defensive line from Breda to the Maginot Line. The offensive plan to invade it was the Sicklestroke variation of Case Yellow wherein two German armies would pour through Belgium and the Ardennes forest. For ten points name the country that fell to the German plan and forced the Dunkirk evacuation.

ANSWER—(France)

20.

**TOSS-UP SOCIAL STUDIES**

Answer the following questions related to the Adams-Onis Treaty.

1. In what decade did it take place.
2. What general's virtual conquest of Florida formed a favorable setting for the treaty.
3. What country ceded Florida to the United States under the terms of the treaty given that the United States would assume 5 million dollars in claims.
4. Under the treaty the United States also gave up all claims to what territory which would later become a state.

ANSWER—1.(1810's[1819]) 2.(Andrew Jackson) 3.(Spain) 4.(Texas)

*Replacement Questions*

**TOSS-UP LITERATURE**

Some have speculated that this English author had a part in writing Shakespeare's plays Titus Andronicus and Richard III, but even without the collaboration he was an established author in his own right. He left the poem Hero and Leander unfinished at his death but he finished the plays The Jew of Malta and Tamburlaine the Great. For ten points name this author killed in a bar fight in 1593.

ANSWER—(Christopher Marlowe)

**BONUS LITERATURE**

Given a title, identify the author.

1. Candide.
  2. Where the Wild Things Are.
  3. Sartoris.
  4. Dandelion Wine.
- ANSWER—1.(Voltaire) 2.(Maurice Sendak) 3.(William Faulkner) 4.(Ray Bradbury)

**TOSS-UP MATH**

What is the simplest form of the radical  $\sqrt{550}$ ?

ANSWER—(5 times the square root of 22)

**BONUS MATH**

Find the following and give answers in simplest form.

1. The set of all points which are equidistant from (0, 2) and (negative 1, 5).
2. The set of all points which are 4 units from the point (negative 2, negative 3)
3. The set of all points which are equidistant from the line  $X$  equals 4 and the point (0, negative 2).
4. The set of all points the difference of whose distances from the (0, 3) and (0, negative 3) is 3.

ANSWER—1.( $X$  minus  $3Y$  equals negative 5)  
2.( $X$  squared plus  $Y$  squared plus  $4X$  plus  $6Y$  minus 3 equals 0)  
3.( $Y$  squared plus  $4Y$  plus  $8X$  minus 12 equals 0)  
4.( $4X$  squared minus  $12Y$  squared plus 27 equals 0)

**TOSS-UP SCIENCE**

After Arthur Eddington checked his theory by showing that the sun does bend the light from other stars, he was asked what he would have thought if it hadn't supported him. He supposedly answered that he would have been sorry for God for having made the mistake of building the universe on the wrong principles. For ten points name this scientist whose theory of relativity was thus proved.

ANSWER—(Albert Einstein)

**BONUS SCIENCE**

Identify the following scientific prefixes for measurement from a description.

1. From the Danish and Norwegian for eighteen, this prefix, which is symbolized a, is equal to  $10^{-18}$ .
2. Created by blending z and the Latin word for seven, septum, this is the prefix for  $10^{-21}$ .
3. From the Greek word teras, which means monster, this prefix is used to represent  $10^{12}$ .
4. From the Greek word for small, this prefix which is represented by the letter mu, stands for  $10^{-6}$ .

ANSWER—1.(Atto) 2.(Zepto) 3.(Tera) 4.(Micro)



**TOSS-UP MISCELLANEOUS**

After starting his career successfully, this actor ran into the curse of the letter W when two of his films starting with the letter W bombed. He starred in the films *Silverado* and *Nightshift* before bombing in *Wyatt Earp* and *Waterworld*. For ten points name this actor who starred in *Dances With Wolves*.

**ANSWER—(Kevin Costner)**

**BONUS MISCELLANEOUS**

Identify the following about a mysterious terrorist who first struck in Chicago in 1978.

1. The name by which this terrorist is known.

2 + 3. The two papers which published his manifesto which denounced technology.

4. The magazine which had first offered to publish the manifesto.

**ANSWER—1.(Unabomber) 2.(Washington Post + the New York Times) 4.(Penthouse)**