

Straight A Quiz Questions  
1613 Cherokee Dr.  
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Show-Me Academic Challenge  
Spring 1994

Game Fourteen

Round 1 - Toss Up

1. Science

What metallic element is a major constituent of the green-colored mineral malachite?

Copper

2. Social Studies

What is the name given to the night of June 29-30, 1934, the day of the great blood purge in Germany when many of the Nazi SA leaders were killed to please the rival SS?

Night of the Long Knives

3. Math (calculation)

What is the second derivative of the equation  $3X^3 - 2X^2 - 9X$

$18X - 4$  or  $2(9X - 2)$

4. Literature

What English poet wrote the visionary poem "Queen Mab" in 1813 when the poet was only 21? This blank verse poem was written in 9 cantos.

Percy Bysshe Shelley

5. Fine Arts

Name the famous composer of classical music who wrote the ballet The Creatures of Prometheus and the opera Fidelio.

Ludwig von Beethoven

6. Social Studies

In Freudian psychology, what is the term given to the hypothetical entity associated with the ethical and moral development of the individual? It is often characterized as an internal code, or conscience, which is responsible for self-imposed standards of behavior.

Superego

7. Math (calculation)

Solve the following equation for X and answer as a mixed numeral in lowest terms:  $2X - 5 = 8X + 9$

$X = -2 \frac{1}{3}$

Science

A certain lens is placed 8 centimeters from a light source. The light is focused 8 centimeters behind the lens. What is the focal length of the lens?

4 centimeters

9. Literature

What daughter of Zeus and Hera in Greek mythology was the goddess of youth and acted as the cupbearer to the gods prior to Ganymede?

Hebe

10. Home Economics

What is the term in cooking given to the process of first browning meat in fat over high heat, then covering it and cooking slowly in the oven in a small amount of liquid?

Braising

11. Math (calculation)

Convert the binary number 110101 into a base ten numeral.

53

12. Language Arts

What is the proper term for the mark of punctuation which consists of an almost vertical slash mark which slants slightly from right to left?

4/5

Virgule

13. Social Studies

Arrange the following four Canadian cities into correct order from west to east: Toronto, Winnipeg, Montreal, Calgary.

Calgary, Winnipeg, Toronto, Montreal

14. Science

What is the term in botany given to the growing of plants without soil by the use of water containing all of the necessary nutrients?

Hydroponics

15. Literature

Name the nineteenth century American author who is famous for his series of stories for boys which encompassed over 120 books selling over 20 million copies. The Tattered Tom series was one of his most popular.

Horatio Alger

Round 2 - Toss Up/Bonus

Science

The different types and varieties of what type of object can be studied graphically in science by using a Hertzsprung-Russell Diagram?

Stars

Bonus 1 - Math (calculation)

1. Name the four consecutive integers whose sum is 58.

13, 14, 15, 16

2. When rolling two fair dice, what is the chance of rolling a 12? ✓

1/36

3. What is the tangent of an angle of 135 degrees? ✓

- 1

4. What is the sum of the interior angles of a hexagon? ✓

720 Degrees

2. Social Studies

During the administration of what U.S. president were the series of laws known as the Pure Food and Drug Laws passed by Congress?

Theodore Roosevelt

Bonus 2 - Science

Give the names for the following from the field of geology:

1. The layer of earth between the crust and the core - Mantle ✓
2. The supercontinent which existed 200 million years ago - Pangea ✓
3. The smooth, black form of natural volcanic glass - Obsidian ✓
4. The pile of debris often seen at the bottom of a cliff - Talus

3. Literature

What 1935 play by Eugene O'Neill centers around the conversations of a group of derelicts in the back room of the End of the Line Cafe?

The Iceman Cometh

Bonus 3 - Fine Arts

Name the artists who created the following works:

1. Water Lilies - Claude Monet
2. The Three Musicians - Pablo Picasso
3. The Anatomy Lesson of Dr. Tulp - Rembrandt
4. The Executions of May 3, 1804, in Madrid - Francisco Goya

Math (calculation)

A certain right triangle has one side of length 6 and another side of length  $2\sqrt{7}$ . Find the length of the hypotenuse of this triangle.

8

Bonus 4 - Literature

Name the famous plays in which you meet the following characters:

1. Blanche Dubois - A Streetcar Named Desire ✓
2. Willy Loman - Death of a Salesman ✓
3. Dr. Gibbs - Our Town ✓
4. Ezra Manon - Mourning Becomes Electra

5. Health

What is the term given to the complex molecules, known as immunoglobulins in biochemistry, which are produced in response to the presence of a foreign substance, usually a protein, in the body and which work to destroy these foreign materials?

Antibodies

Bonus 5 - Social Studies

In what years were the following men elected as U.S. president:

1. John F. Kennedy - 1960 ✓
2. Jimmy Carter - 1976 ✓
3. John Quincy Adams - 1824 ✓
4. Rutherford B. Hayes - 1876 ✓

6. Fine Arts

Name the composer who wrote the 1905 opera Salome, based upon a play by Oscar Wilde.

Richard Strauss

Bonus 6 - Health

Identify the following:

1. The rarest of the four major blood types - AB ✓
2. Metallic element used to treat manic depression - Lithium ✓
3. The hormone which increases the metabolic rate - Thyroxin
4. Genetic disease causing long arms and legs and damage to the valves of the aorta - Marfan's Syndrome

7. Social Studies

To what large island would you go to visit the tiny nation of Brunei?

Borneo

7 - Math (calculation)

Factor the following expressions:

- $2X^2 + 7X - 15$  -  $(X + 5)$  times  $(2X - 3)$
- $12X^2 - X - 1$  -  $(4X + 1)$  times  $(3X - 1)$  ✓
- $9X^2 + 27X + 20$  -  $(3X + 4)$  times  $(3X + 5)$  ✓
- $X^3 + 2X^2 - X - 2$  -  $(X + 1)$  times  $(X - 1)$  times  $(X + 2)$

8. Science

What principle in chemistry states that if a system in equilibrium is subjected to any change in conditions, the equilibrium is displaced in the direction that counteracts the effect of the change in conditions?

Le Chatelier's Principle

Bonus 8 - Literature

Name the poets who created the following:

- "The Lotos-Eaters" - Alfred Tennyson
- "The Man Against the Sky" - Edwin Arlington Robinson
- "The Marshes of Glynn" - Sidney Lanier
- "Lamia" - John Keats

9. Math

A store makes a \$4.00 profit selling a shirt for \$24.00. If the price which the store pays for the shirt is increased by 10% and the store raises the selling price by 15%, what will be the new profit?

\$5.60

Bonus 9 - Social Studies

Name the positions held by the following men in the cabinet of President Bush:

- Richard Cheney - Secretary of Defense ✓
- Jack Kemp - Secretary of Housing and Urban Development ✓
- Manuel Lujan - Secretary of the Interior
- Nicholas Brady - Secretary of the Treasury ✓

10. Literature

What American author and humorist wrote the popular children's books Stuart Little, The Trumpet of the Swan, and Charlotte's Web?

E.B. White

Bonus 10 - Science

Give the chemical formulas for the following compounds:

- Glucose -  $C_6H_{12}O_6$  ✓
- Methyl Chloride -  $CH_3Cl$
- Propane -  $C_3H_8$
- Boric Acid -  $H_3BO_3$

Round 3 - Toss Up

1. Social Studies

In what country did Iranian Shiite leader Ruhollah Khomeini live in exile from 1963 until 1979 when he returned to Iran during the Revolution?

France

2. Math

What law in mathematics states that for any two numbers a and b, a times b is equal to b times a?

Commutative Property of Multiplication

3. Literature

In what Oliver Goldsmith novel do you meet the characters Tony Lumpkin and his mother Mrs. Hardcastle?

She Stoops to Conquer

4. Science

In a strand of RNA in a human cell, what nitrogen base combines with an adenine on the opposite side of the strand? This nitrogen base is not found in a molecule of DNA.

Uracil

5. Language Arts

What is the term in grammar for a present participle which functions as a noun to name an action or state of being, such as the word "swimming" in the sentence "Swimming alone can be dangerous."?

Gerund

6. Math (calculation)

Solve the following simultaneous equations for X and Y:

$$3X + 2Y = 16 \quad \text{and} \quad 2X + Y = 9$$

$$X = 2, Y = 5$$

7. Social Studies

You fly on a direct flight between the cities of Lisbon and Tripoli. Other than Portugal and Libya, over parts of what three nations will you fly?

Spain, Algeria, Tunisia

8. Science

Malaria has been one of the world's major diseases throughout history. Name the drug made from the bark of the cinchona tree which is the traditional treatment for malaria.

Quinine

Literature

What nineteenth century American poet once said that "The United States themselves, are essentially the greatest poem"?

Walt Whitman

10. Fine Arts

Name the popular Broadway musical which was based upon the play The Matchmaker.

Hello, Dolly

11. Math (calculation)

In lowest terms, what is  $\frac{2}{3}$  times  $\frac{3}{4}$  times  $\frac{1}{2}$  times  $\frac{5}{2}$ ?

$\frac{5}{8}$

12. Science

The planet Saturn is thought to have the most moons of the planets of the solar system. Name the only two planets which do not have any moons.

Mercury and Venus

13. Agriculture

A variety of different beef cattle breeds exist throughout the world. Name two of the three common breeds which are collectively known as the classic British breeds.

Hereford, Angus, Shorthorn

14. Literature

What titan of Greek mythology, one of the sons of Iapetus, accepted the gift of Pandora from Zeus which resulted in the unleashing of evils onto the world?

Epimetheus

15. Social Studies

What World War II battle between the German and Soviet armies in July of 1943 is considered to have been the largest tank battle in history?

Battle of Kursk

Round 4 - Toss Up/Bonus

1. Literature

What modern American author, a winner of the Nobel Prize for Literature, wrote the novels The Adventures of Augie March and Humboldt's Gift?

Saul Bellow

1 - Social Studies

Which countries contain the mouths of the following rivers:

1. Colorado River - Mexico ✓
2. Orinoco River - Venezuela ✓
3. Indus River - Pakistan ✓
4. Magdalena River - Colombia

2. Math

What is the term used to refer to the smallest unit of storage in a modern digital computer? It is based upon the binary system of notation.

Bit

Bonus 2 - Science

1. What is the mass in kilograms of a rock weighing 4.9 Newtons? ✓

0.5 kilograms

2. What term is used to describe a liquid which evaporates very rapidly?

Volatile

3. What is the kinetic energy in joules of a 2 kilogram object moving at 5 meters per second?

25 Joules ✓

4. Momentum is defined as the product of what two properties of a moving object?

Mass and Velocity ✓

3. Science

What planet of the solar system was discovered by English astronomer William Herschel with a home-made telescope in 1781?

Uranus

Bonus 3 - Language Arts

Give the meanings of the following Latin roots:

1. Omni -

All

2. Bell -

War

3. Man -

Hand

4. Ann -

Year

4. Social Studies

Name the American general who replaced Douglas MacArthur as Allied commander in the Korean War when MacArthur was fired by President Truman.

Matthew Ridgway

us 4 - Sports

Name the professional sports teams which won the following championships in these years:

1. World Series of 1990 - Cincinnati Reds
2. NBA championship of 1987-88 - Los Angeles Lakers
3. Super Bowl III in January 1969 - New York Jets
4. World Series of 1968 - Detroit Tigers

5. Language Arts

Count from seven to ten in Spanish.

Siete, Ocho, Nueve, Diez

Bonus 5 - Math (calculation)

1. Find the volume of a cylinder with a radius of 5 and a height of 8.

200 pi

2. Using  $i$  as the imaginary number, what is  $(3 + i)$  times  $(2 - i)$ ?

7 - i

3. What is the cosine of a 135 degree angle?

Negative square root of 2 divided by 2

4. What is 9 factorial divided by 6 factorial?

504

6. Math (calculation)

A box contains 10 blue marbles, 20 red marbles, and 20 green marbles. A marble is picked at random, replaced, the box is shaken, and another marble is randomly picked. What is the fractional chance that both marbles picked were red?

4/25

Bonus 6 - Science

Give the names for the following from the field of botany:

1. Vascular tissue to carry water in a plant - Xylem ✓
2. The slender stalk in the middle of the pistil of a flower - Style
3. Layer of irregular cells with air spaces in a leaf - Spongy Layer
4. The fluid matrix inside of a chloroplast - Stroma

7. Health

What is the term given to the lung disease in which walls of the alveoli break down making breathing very difficult? This is usually seen in people who have smoked for many years.

Emphysema

onus 7 - Literature

Name the countries which provided the settings for the following novels:

1. Tess of the D'Urbervilles - England ✓
2. Kim - India ✓
3. Frankenstein - Switzerland
4. The Marble Faun - Italy

8. Science

What common chemical is broken down in living cells by the enzyme catalase? Oxygen and water are the products of this reaction.

Hydrogen Peroxide

Bonus 8 - Social Studies

Name the English monarchs whose reigns lasted for the following years:

1. 1509-1547 - Henry VIII
2. 1936-1952 - George VI
3. 1189-1199 - Richard I
4. 1553-1558 - Mary I

9. Literature

In what 1814 Jane Austen novel do you meet the characters Sir Thomas and Lady Bertram, their sons Tom and Edmund, and their daughters Maria and Julia?

Mansfield Park

Bonus 9 - Math (Calculation)

Give the positive real number solutions to the following equations:

1.  $4X - 8 = X + 17$                        $X = 25/3$  or  $8 \frac{1}{3}$
2.  $X^2 - X = 6$                                $X = 3$
3.  $3X^2 = 13X + 10$                          $X = 5$
4.  $6X^2 = 12 - X$                           $X = 4/3$

10. Social Studies

Queen Anne was the last Stuart monarch of England. What royal house succeeded the Stuarts in 1714?

House of Hanover

Bonus 10 - Literature

Name the poets who wrote the following lines:

1. "I hope to see my pilot face to face/when I have crossed the bar"  
- Alfred Tennyson
2. "'You are old, Father William,' the young man said" - Lewis Carroll
3. "And hand in hand, on the edge of the sand, they danced by the light of the moon" - Edward Lear
4. "Oh, to be in England, now that April's there." - Robert Browning

Replacement Questions - Round 14

Toss Up

Science

What is the mass in kilograms of an object which weighs 14.7 newtons?

1.5 kilograms

Math (calculation)

Find the cube root of 343.

7

Social Studies

Of what U.S. state was John Sununu the governor throughout much of the 1980's before he took a job in the administration of President Bush?

New Hampshire

Literature

For what novel did author Harper Lee win the 1961 Pulitzer Prize for literature?

To Kill a Mockingbird

Fine Arts

Name the French artist who created the famous painting The Yellow Christ.

Paul Gauguin

Language

Name the Italian word often used in English to refer to a blood feud, originally referring to the feuding families of Corsica who brutally avenged the deaths of relatives.

Vendetta

Misc-Health

What disease is a Wasserman test designed to detect? It is a type of blood test for antibodies against this disease.

Syphilis

Bonus

Science

Give the chemical formulas for the following compounds:

1. Sulfuric Acid -  $H_2SO_4$
2. Ammonium Chloride -  $NH_4Cl$
3. Calcium Bromide -  $CaBr_2$
4. Octene -  $C_8H_{16}$

## Math

Give the names for the triangles which have the following characteristics:

1. All three sides are equal - Equilateral
2. Two of the three sides are equal - Isosceles
3. All three sides are of different length - Scalene
4. One of the angles is greater than 90 degrees - Obtuse

## Social Studies

Name the U.S. states which lie on the eastern borders of the following states:

- |               |   |                |                |   |              |
|---------------|---|----------------|----------------|---|--------------|
| 1. Washington | - | Idaho          | 2. Louisiana   | - | Mississippi  |
| 3. Tennessee  | - | North Carolina | 4. Connecticut | - | Rhode Island |

## Literature

Name the Roman counterparts to the following Greek gods and goddesses:

- |            |   |         |           |   |       |
|------------|---|---------|-----------|---|-------|
| 1. Athena  | - | Minerva | 2. Hera   | - | Juno  |
| 3. Demeter | - | Ceres   | 4. Hestia | - | Vesta |

## Fine Arts

Name the composers of the following operas:

1. Beatrice and Benedick - Hector Berlioz
2. The Clemency of Titus - W.A. Mozart
3. Deceit Outwitted - Joseph Haydn
4. The Snow-Maiden - Nikolay Rimsky-Korsakov

## Language

Identify the following parts of speech:

1. Expresses an action or state of being - Verb
2. Modifies a noun - Adjective
3. Modifies a verb or adjective - Adverb
4. Connects sentence elements of equal importance - Conjunction

## Misc-Sports

Give the nicknames of the sports teams at the following universities:

1. Iowa - Hawkeyes
2. Kansas - Jayhawks
3. Georgia Tech - Yellowjackets
4. Syracuse - Orangemen