

Game Ten

Round 1 - Toss Up

1. Science

What is the term in botany given to the dense layer of elongated cells inside a leaf which carry on most of the photosynthesis for that leaf?

Palisade Layer

2. Social Studies

Name any two of the three American astronauts who were killed by a fire in their Apollo 1 capsule in 1967.

Ed White, Gus Grissom, Roger Chaffee

3. Math (calculation)

On a Cartesian plane, what is the midpoint of a line joining the points (6,3) and (8,11)?

(7,7)

4. Literature

What British poet of the late eighteenth century wrote the famous collections Songs of Innocence and Songs of Experience?

William Blake

5. Fine Arts

Name the twentieth century Italian composer who was the guiding force behind the creation of the Spoleto Festivals, both in Italy and the United States. One of these arts and music festivals is held in Charleston, South Carolina each year.

Gian-Carlo Menotti

6. Social Studies

What American union leader called for a general strike of all rail workers in 1894 to support the Pullman Company workers when they went on strike? Federal troops were eventually called in to help end the strike.

Eugene Debs

7. Math (calculation)

Find the value of 9 factorial divided by 6 factorial.

8. Science

What property of a moving object can be calculated in physics by multiplying its mass times its velocity?

Momentum

9. Literature

Name the first of Arthur Conan Doyle's Sherlock Holmes stories. It was originally published in 1887.

A Study in Scarlet

10. Home Economics

In kitchen measurement, how many teaspoons are needed to make up one fluid ounce?

Six

11. Math (calculation)

When rolling two fair dice, what is the chance, expressed as a fraction in lowest terms, of having the numbers on the dice total eleven?

1/18

12. Language Arts

Give the French term which is commonly used in English to refer to a woman who uses her charms to lure men to disagreeable ends. It is literally translated as a "disastrous woman."

Femme Fatale

13. Social Studies

The U.S. national park system was begun in 1872. Name any three of the four U.S. national parks which were established in the nineteenth century. These are four of the most popular today.

Yellowstone, Yosemite, Sequoia, Mount <sup>Rainier</sup> Ranier

14. Science

An important equation in physics states that radiant energy is equal to its frequency times a constant. What is the term given to this constant which is represented by the letter h?

Planck's Constant

15. Literature

What American author created the characters Isaac McCaslin, Boon Hogganbeck, and Sam Fathers in his novelette The Bear, first published in 1942?

William Faulkner

Round 2 - Toss Up/Bonus

1. Science

What are the three major chemical elements which are found in lipids and carbohydrates?

Carbon, Hydrogen, Oxygen

Bonus 1 - Math (Calculation)

1. Simplify the square root of 242 - 11 square roots of 2
2. What is the sine of an angle of  $13\pi$ ? 0
3. Convert the binary number 10111 to base ten. 23
4. Convert the base ten number 25 to base 8. 31

2. Social Studies

At the beginning of the Second World War, what European nation controlled the area which is now the country of Tunisia?

France

Bonus 2 - Science

Answer the following from the science of astronomy:

1. What is the 4th planet from the sun? Mars
2. What is the term for an exploding star? Nova (or Supernova)
3. Name the only known moon of Pluto. Charon
4. What is the term for a body which passes through the atmosphere to land on the surface of the earth? Meteorite

3. Literature

Name the Irish playwright who was the author of the 1901 work Caesar and Cleopatra.

George Bernard Shaw

Bonus 3 - Fine Arts

Name the popular song writers who wrote the following familiar tunes:

1. "My Old Kentucky Home" - Stephen Foster
2. "White Christmas" - Irving Berlin
3. "Give My Regards to Broadway" - George M. Cohan
4. "Maple Leaf Rag" - Scott Joplin

#### 4. Math

What trigonometric function of an angle in a right triangle is defined as the length of the hypotenuse divided by the length of the side opposite the angle?

Cosecant

#### Bonus 4 - Literature

Identify the plays by William Shakespeare which contain the following characters:

1. Portia and Shylock - The Merchant of Venice
2. Friar Lawrence and Count Paris - Romeo and Juliet
3. Laertes and Fortinbras - Hamlet
4. Don John and Don Pedro - Much Ado About Nothing

#### 5. Health

Name the chronic lung disease, caused by a mycobacterium, which was a major cause of death in the nineteenth and early twentieth century and which is now on the rise again in the United States as some strains have become resistant to antibiotics. This disease was once known as "consumption."

Tuberculosis

#### Bonus 5 - Social Studies

In what U.S. states can you visit the following tourist attractions:

1. Bar Harbor - Maine
2. Lake Mead National Recreation Area - Nevada
3. Custer Battlefield National Monument - Montana
4. The Garden of the Gods - Colorado

#### 6. Language Arts

What is the meaning of the Greek root "dyna," as in the words "dynamo" and "dynamic?"

*dynasty dynamite*

Power

#### Bonus 6 - Sports

Name the head coaches of the following NFL football teams in 1994:

1. Buffalo Bills - Marv Levy
2. Phoenix Cardinals - Buddy Ryan
3. Dallas Cowboys - Barry Switzer
4. Washington Redskins - Norv Turner

#### 7. Social Studies

Name the American prohibitionist who became famous in the late 1800's for leading groups of women into saloons and destroying them with hatchets.

Carrie Nation

Bonus 7 - Math (calculation)

Factor the following expressions:

1.  $X^2 - 12X - 45$  -  $(X + 3)$  times  $(X - 15)$
2.  $2X^2 + 9X - 110$  -  $(X + 10)$  times  $(2X - 11)$
3.  $30X^2 + 17X - 21$  -  $(5X - 3)$  times  $(6X + 7)$
4.  $3X^3 + 23X^2 + 40X$  -  $X$  times  $(X + 5)$  times  $(3X + 8)$

8. Science (calculation)

An object moving with a velocity of 6 meters per second has a kinetic energy of 90 joules. Find the mass of this object.

5 kilograms

Bonus 8 - Literature

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

1. Willy Loman - Death of a Salesman
2. Quasimodo - The Hunchback of Notre Dame (Notre Dame de Paris)
3. Gregor Samsa - The Metamorphosis
4. Paul Baumer - All Quiet On the Western Front

9. Math (calculation)

The product of two numbers is 180 and their difference is 3. Find these two numbers.

12 and 15

Bonus 9 - Social Studies

Name the countries described by the following clues:

1. Its capital is Sofia - Bulgaria
2. It was once ruled by Gemal Nasser - Egypt
3. It was invaded by Italy in October of 1935 - Ethiopia
4. It contains the Shannon River - Ireland

10. Literature

Name the Roman god of beginnings. He is usually shown as having two faces looking in opposite directions.

Janus

Bonus 10 - Science

Identify the following flower parts:

1. Top of the stamen to make pollen - Anther
2. Top of the pistil to catch pollen - Stigma
3. Base of the pistil containing ovules - Ovary
4. Green structures to protect the bud - Sepals

Round 3 - Toss Up

1. Social Studies

What religious order was founded in the seventeenth century by Englishman George Fox?

Quakers (Society of Friends)

2. Math

What type of geometric figure would be produced by graphing the following equation:

$$X^2 + 2Y^2 = 36 ?$$

Ellipse

3. Literature

What American author wrote the 1911 novel Jennie Gerhardt, a variation of a theme begun in his earlier work Sister Carrie?

Theodore Dreiser

4. Science

What is the term for the white fatty material that forms a sheath between the axons and the Schwann cells in human nerves?

Myelin

5. Language Arts

In Spanish, what is the correct way to refer to the second of January?

El Dos de Enero

6. Math (calculation)

In lowest terms, what is  $\frac{2}{3}$  times  $\frac{3}{4}$  times  $\frac{5}{8}$  ?

$\frac{5}{16}$

7. Social Studies

Many foreign car companies have set up factories in the United States. Which of these foreign companies produces the most automobiles in our country, over 400,000 per year?

Honda

8. Science

What is the chemical formula for the compound ammonium perchlorate?

$NH_4 ClO_4$

9. Literature

In what work by John Steinbeck do you meet the characters Lennie Small and George Milton?

Of Mice and Men

10. Fine Arts

Name the French artist of the Romantic era who created the paintings Tiger Attacking a Horse and Woman of Algiers.

Eugene Delacroix

11. Math (calculation)

A dress normally sells for \$80.00. At this price the store makes a profit of \$22.00. How much profit will the store make if they reduce the price of the dress by 20 percent in a sale?

\$6.00

12. Science

What term in chemistry is used to describe a liquid, often a flammable liquid, which evaporates very rapidly?

Volatile

13. Agriculture

What is the major agricultural crop of the state of North Carolina? The neighboring states of Virginia and South Carolina also produce a lot of this product.

Tobacco

14. Literature

In Jules Verne's Around the World in Eighty Days, in what city does Phileas Fogg begin and end his journey?

London

15. Social Studies

Name the Roman general who conquered Jerusalem in 63 B.C.. He was later to become a rival of Caesar.

Pompey

Round 4 - Toss Up/Bonus

1. Literature

What is the literary term for a story with an underlying meaning in which the characters and actions stand directly for something other than themselves?

Allegory

Bonus 1 - Social Studies

Identify the U.S. states which the following men represent in Statuary Hall in the U.S. Capitol:

- |                          |                                   |
|--------------------------|-----------------------------------|
| 1. Brigham Young - Utah  | 3. Daniel Webster - New Hampshire |
| 2. Ethan Allen - Vermont | 4. Jefferson Davis - Mississippi  |

2. Math (calculation)

Find the distance between the points (4,8) and (3,5) on a Cartesian plane.

Square root of 10

Bonus 2 - Science

Answer the following:

1. What is the term used to describe a substance which can be pounded into thin sheets without breaking?

Malleable

2. Name the instrument used to cut very thin sections to prepare microscope slides.

Microtome

3. What unit is equal to one joule per coulomb?

Volt

4. Give the chemical formula for methyl iodide.

CH<sub>3</sub> I

3. Science

What is the name given to the tides which occur during new moon and full moon? These are the highest and lowest tides of a lunar cycle.

*Andy sez Neep tides* Spring Tides

Bonus 3 - Language Arts

Identify the following words which all begin with the letters "out."

1. A hunter or fisherman - Outdoorsman
2. Isolated area of Australia - Outback
3. A point of view - Outlook
4. Projection from a type of canoe - Outrigger

4. Social Studies

After Rhode Island, what is the second smallest U.S. state in total land area?

Delaware

#### Bonus 4 - Health

Identify the following:

1. The inner layer of the eye containing light receptor cells - Retina
2. The fluid-filled structures in the ear to sense balance - Semicircular Canals
3. The vertebrae in the lower back of a human - Lumbar Vertebrae
4. The tiny channels in bones which contain blood vessels - Haversian Canals

#### 5. Fine Arts

Name the stringed instrument which is tuned an octave and a fourth below the violin. It is about twice the length of the violin and was invented at about the same time.

Cello

#### Bonus 5 - Math (calculation)

Give the positive real number solutions to the following equations:

1.  $5X - 8 = 3X + 18$

$X = 13$

2.  $4X^2 - 11X = 45$

$X = 5$

3.  $6X^2 + X = 15$

$X = 3/2$  or  $1 \frac{1}{2}$

4.  $24X^2 = 7X + 5$

$X = 5/8$

#### 6. Math

If an angle is in the fourth quadrant of a Cartesian plane, what two trig functions of that angle will be positive?

Cosine and Secant

#### Bonus 6 - Science

Identify the following terms from the science of chemistry:

1. Energy needed to start a reaction - Activation Energy
2. Chemical with a pH above 7 - Base (or alkaline substance)
3. Weak attractive forces between molecules - Van der Waals Forces
4. Chemical bonds occurring between s orbitals - Sigma Bonds

#### 7. Sports

Name the quarterback for the New England Patriots who was the first player chosen in the 1993 NFL draft. He appears headed for stardom.

Drew Bledsoe

Bonus 7 - Literature

Identify the following from Greek mythology:

1. The killer of the Chimera - Bellerophon
2. The 9-headed monster killed by Hercules - Hydra
3. The nymph changed into a laurel tree - Daphne ✓
4. The goddess of revenge - Nemesis ✓

8. Science

Give the common name for the constellation of Crux. Although invisible from most of the United States, this is one of the most famous constellations.

The Southern Cross

Bonus 8 - Social Studies

Name the U.S. states described by the following clues:

1. It contains the highest point in the United States - Alaska
2. It was the first to ratify the Constitution - Delaware
3. It is the only state to border Maine - New Hampshire
4. It contains Mount Rushmore - South Dakota \*

9. Literature

Name the author of the 1880 novel Ben-Hur, the basis for two popular films.

Lew Wallace

Bonus 9 - Math (calculation)

Find the square roots of the following numbers:

- |             |                  |
|-------------|------------------|
| 1. 196 - 14 | 3. 961 - 31      |
| 2. 576 - 24 | ✓ 4. 10201 - 101 |

10. Social Studies

Under what U.S. president was the Department of Housing and Urban Development created? This was a part of this president's massive social agenda.

Lyndon Johnson

Bonus 10 - Literature

Give the middle names of the following literary figures:

1. Ralph Emerson - Waldo
2. George Shaw - Bernard
3. Percy Shelley - Bysshe ✓
4. Joyce Kilmer - Carol ✓

Replacement Questions - Game 10

Toss Up

Science

What physicist developed the principle that no two electrons can occupy the same energy level? This is known as his "exclusion principle."

Wolfgang Pauli

Math (calculation)

Give the value of 8 factorial divided by 4 factorial.

1680

Social Studies

What future U.S. president was born on March 15, 1767, to a poor farm couple who had immigrated from Northern Ireland only two years before? He was the first president not to come from the upper classes.

Andrew Jackson

Literature

What American author of the early nineteenth century wrote a trilogy of novels collectively known as the Littlepage Manuscripts?

James Fenimore Cooper

Fine Arts

What popular Spanish dance is said to have been invented by dancer Sebastian Cerezo in about 1780? It has inspired several famous musical works.

Bolero

Language Arts

Give the French term which is often used in English to refer to something that is in good taste, or according to strict etiquette.

De Rigueur

Agriculture (Misc)

What U.S. state annually leads the nation in the amount of corn which is grown?

Iowa

Bonus

Math (calculation)

Give the third roots of the following numbers:

1. 125 - 5  
2. 512 - 8

3. 2197 - 13  
4. 6859 - 19

## Science

Name the chemical elements which have the following atomic numbers:

- |                 |                |
|-----------------|----------------|
| 1. 7 - Nitrogen | 3. 86 - Radon  |
| 2. 3 - Lithium  | 4. 56 - Barium |

## Social Studies

Name the states in which the following men have recently served as governor or are currently serving as governor:

1. Roy Romer - Colorado
2. Lowell Weicker - Connecticut
3. Kirk Fordice - Mississippi
4. Jim Hunt - North Carolina

## Literature

Name the authors of the following literary works:

1. Two Years Before the Mast - Richard Henry Dana, Jr.
2. Far From the Madding Crowd - Thomas Hardy
3. McTeague - Frank Norris
4. Cakes and Ale - W. Somerset Maugham

## Fine Arts

Name the composers of the following works:

1. Appalachian Spring - Aaron Copland
2. Madame Butterfly - Giacomo Puccini
3. The Creatures of Prometheus - Ludwig von Beethoven
4. Bluebeard's Castle - Bela Bartok

## Language Arts

Give the correct terms for a male of the following animals:

1. Swine - Boar
2. Goose - Gander
3. Whale - Bull
4. Duck - Drake

## Sports (Misc)

Name the conferences in which the following colleges and universities compete in basketball:

1. Ohio State - Big 10
2. Boston College - Big East
3. Montana - Big Sky Conference
4. Wyoming - Western Athletic Conference (WAC)