

Game Thirteen

Round 1 - Toss Up

1. Science

What is the term in physics given to the angle that a light ray makes with the normal line as it arrives at a surface?

Angle of Incidence

2. Social Studies

On September 15 of what year did the famous Puritans sail from Plymouth, England on the Mayflower? They arrived on Cape Cod over two months later.

? Pilgrims = 1620      1620  
? Puritans (later) 1630

3. Math (calculation)

Find the average of the following numbers: 17, 23, 25, 32, 35

26.4

4. Literature

What 1932 Aldous Huxley novel attacked the popular eugenics theories of the day and foreshadowed concerns over genetic engineering?

Brave New World

5. Fine Arts

Name the Italian composer of the early eighteenth century who wrote the concerto known as The Four Seasons.

Antonio Vivaldi

6. Social Studies

What English philosopher founded the philosophy of Utilitarianism in the eighteenth century?

Jeremy Bentham

7. Math (calculation)

In lowest terms, what is  $5/8 - 5/12$  ?

5/24

8. Science

According to Boyle's Law in chemistry, what property of a confined gas at constant temperature is proportional to its volume?

Pressure

9. Literature

In a famous Greek myth, Poseidon and Athena had a contest as to who could give the best gift to the city of Athens. What was Athena's gift to the city?

Olive Tree

10. Home Economics

What term in cooking is used to refer to the process of plunging vegetables or fruit into boiling water for a brief period to bring out the color, loosen the skins, or mellow the flavors?

Blanching

11. Math

Angle A is in the third quadrant of a Cartesian plane. What two trigonometric functions of angle A will be positive?

Tangent and Cotangent

12. Language Arts

What specific grammatical term is used to classify the words "and", "but", "or", "although", and "because" which are used to connect separate elements in a sentence?

Conjunctions

13. Social Studies

Name the ultraconservative U.S. political organization which was founded by Robert Welch in 1958 to fight what it perceived as Communist influences in the United States.

John Birch Society

14. Science

What is the collective term for the two galaxies, irregular in shape and visible in the southern hemisphere, which are the nearest to our own galaxy?

Magellanic Clouds

15. Literature

Name the character in Shakespeare's Romeo and Juliet who makes the famous Queen Mab speech in the play. He is a friend of Romeo.

Mercutio

Round 2 - Toss Up/Bonus

1. Social Studies

Name the first U.S. president to be elected after World War I. He died in office in 1923.

Warren G. Harding

Bonus 1 - Math (calculation)

1. Name the three consecutive integers whose sum is 144.

47, 48, 49

2. What is the chance of rolling a three with a pair of dice?

1/18

3. Find the distance between the points (6, 3) and (4, - 4).

Square root of 53

4. Using imaginary numbers, what is (3 + i) quantity squared?

8 + 6i

2. Science

Name the British physicist of the late 19th and early 20th centuries who is credited with inventing a type of Cathode ray tube which bears his name.

William Crookes

Bonus 2 - Fine Arts

Name the artists who created the following works:

1. The Creation of Adam - Michelangelo
2. Christina's World - Andrew Wyeth
3. The Night Cafe - Vincent Van Gogh
4. The Raft of the Medusa - Theodore Gericault

3. Literature

What English author, knighted for his work during the First World War, wrote the famous 1893 novel The Prisoner of Zenda?

Anthony Hope

Bonus 3 - Science

Name the planets which are described by the following:

1. It has the highest density - Earth
2. Its atmosphere is 96% carbon dioxide - Venus
3. It has the most eccentric orbit - Pluto
4. It is orbited by the moons Ariel and Miranda - Uranus

Math (calculation)

Factor the expression  $2X^2 - 11X - 21$

$(2X + 3)$  times  $(X - 7)$

Bonus 4 - Literature

Name the French authors who created the following works:

1. Madame Bovary - Gustav Flaubert
2. Candide - Voltaire
3. The Myth of Sisyphus - Albert Camus
4. Being and Nothingness - Jean-Paul Sartre

5. Health

What is the term for the fluid-containing, membrane-lined cavities located within joints of the skeletal system which help reduce friction between moving bones?

Bursae

Bonus 5 - Social Studies

In what years in the 19th century did the following events occur:

1. The U.S. Civil War began - 1861
2. The Missouri Compromise passed - 1820
3. The Battle of Waterloo was fought - 1815
4. President James Garfield was assassinated - 1881

6. Fine Arts

What French composer wrote the famous musical piece "The Carnival of the Animals"?

Camille Saint-Saens

Bonus 6 - Sports

Name the American athletes who won the following Olympic events in the given years:

1. Men's 100-meter run in 1984 - Carl Lewis
2. Men's springboard diving in 1988 - Greg Louganis
3. Women's 200-meter run in 1988 - Florence Griffith-Joyner
4. Women's individual figure skating in 1976 - Dorothy Hamill

7. Social Studies

You are in the extreme northwestern corner of Paraguay. What nation lies just across the nearest border?

Bolivia

Bonus 7 - Math (calculation)

Simplify the following:

1. Square root of 8 + square root of 12  
- 2 times (square root of 2 plus square root of 3)
2. Square root of 180 - 6 times square root of 5
3.  $2X^2 - 5X - 12 / 2X + 3 - X - 4$
4.  $12X^2 - 5X - 3 / 3X + 1 - 4X - 3$

8. Science

In an equation in physics, what letter is used to represent electrical current?

I

Bonus 8 - Literature

Name the poets who wrote the following poems:

1. "Annabel Lee" - Edgar Allen Poe
2. "By the Bivouac's Fitful Flame" - Walt Whitman
3. "The Second Coming" - William Butler Yeats
4. "To His Coy Mistress" - Andrew Marvell

9. Math (calculation)

Answer the following in Roman numerals: XIV times VII.

XCVIII

Bonus 9 - Social Studies

In what countries do you find the following:

1. Great Slave Lake - Canada
2. Tiber River - Italy
3. Mount Cotopaxi - Ecuador
4. Tagus River - Portugal

10. Literature

What English novelist and critic envisioned a future state terrorized by teenage gangs in his 1962 novel A Clockwork Orange?

Anthony Burgess

Bonus 10 - Science

Name the following:

1. Number of chromosomes in a normal human egg cell - 23
2. Order of mammals in which humans are classified - Primates
3. The structures which the protozoa causing African Sleeping Sickness use to move - Flagella
4. Genus of protozoa causing African Sleeping Sickness - Trypanosoma

Round 3 - Toss Up

1. Social Studies

In what year did Alan B. Shepard become the first American to enter space, reaching a height of 116 miles in his Mercury spacecraft?

1961

2. Math (calculation)

What is the first derivative of the expression  $12X^3 - 18X^2 - 31X + 3$

$36X^2 - 36X - 31$

3. Literature

In Mark Twain's The Adventures of Huckleberry Finn, who is the owner of the slave Jim, from whom he runs away? She is the sister of Widow Douglas.

Miss Watson

4. Science

What is the name for the openings in the lower epidermis of a leaf which take in carbon dioxide for a plant to use in photosynthesis?

Stomata (or Stomates)

5. Language Arts

In the sentence, "The author used an allusion to mythology," give the correct spelling of the word "allusion."

A-L-L-U-S-I-O-N

6. Math (calculation)

Solve the following equation for X and state your answer as a mixed numeral in lowest terms:  $7X - 5 = 4X + 9$

$X = 4 \frac{2}{3}$

7. Social Studies

What western U.S. state has annually led the nation in copper production since 1907?

Arizona

8. Science

What chemical element is alloyed with copper to form bronze?

Tin

Literature

What is considered to be the last play of William Shakespeare? It contains the characters Prospero and Miranda.

The Tempest

10. Fine Arts

Name the American songwriter of the nineteenth century who wrote the state song of Kentucky, "My Old Kentucky Home."

Stephen Foster

11. Math (calculation)

What would be the volume of a cylindrical can in terms of pi cubic inches if the can has a height of 8 inches and a diameter of 4 inches?

32 pi cubic inches

12. Science

Name the Scottish geologist who wrote the 1795 book Theory of the Earth in which he gave much evidence for his theory of uniformitarianism.

James Hutton

13. Agriculture

What is the term used by ranchers and farmers to refer to the process of removing the tail of an animal, particularly of a sheep?

Docking

14. Literature

What specific form of humorous verse was popularized by English poet Edward Lear in his Book of Nonsense in 1846? These poems have five lines with an a-a-b-b-a rhyme scheme.

Limerick

15. Social Studies

What Harvard educated lawyer, president of the Carnegie Endowment for International Peace, was sentenced in 1948 to five years in prison based upon charges made by Whittaker Chambers that he was a Communist spy?

Alger Hiss

Round 4 - Toss Up/Bonus

1. Literature

For what novella was Ernest Hemingway awarded the 1953 Pulitzer Prize for fiction?

The Old Man and the Sea

Bonus 1 - Social Studies

Name the wars in which the following battles were fought:

1. Siege of Khe Sanh - Vietnam War
2. Battle of Kasserine Pass - World War II
3. Battle of Bosworth Field - Wars of the Roses
4. Battle of Crecy - Hundred Years War

2. Math (calculation)

On a Cartesian plane, what is the distance between points (5,8) and (3,2)?

Square root of 40 or 2 square roots of 10

Bonus 2 - Science

Identify the chemical elements which have the following atomic numbers

- |                  |               |
|------------------|---------------|
| 1. 17 - Chlorine | 2. 2 - Helium |
| 3. 7 - Nitrogen  | 4. 82 - Lead  |

3. Science

What is the chemical name for the alkaline substance which is sometimes known as slaked lime or hydrated limewater?

Calcium Hydroxide

Bonus 3 - Language Arts

Give the meanings of the following Greek roots:

- |                           |                 |
|---------------------------|-----------------|
| 1. Pan - All (everything) | 2. Helio - Sun  |
| 3. Polis - City           | 4. Dyna - Power |

4. Social Studies

What Polish-born Israeli leader served as foreign minister under Menachem Begin and then succeeded Begin as prime minister in the early 1980's?

Yitzhak Shamir

Bonus 4 - Sports

Identify the following sports personalities:

1. The all-time major league baseball home run leader - Henry Aaron
2. The boxer known as the Brown Bomber - Joe Louis
3. The most recent winner of the Grand Slam of tennis - Steffi Graf
4. The first man to run a mile in four minutes - Roger Bannister



## Language Arts

Ostentatious means showy or pretentious. Spell ostentatious.

O-S-T-E-N-T-A-T-I-O-U-S

### Bonus 5 - Math (calculation)

1. What is the sine of a 150 degree angle?  
1/2
2. Name the three prime numbers between 70 and 80.  
71, 73, 79
3. Convert the binary number 100101 into base ten.  
37
4. Convert the base ten number 25 into base 16.  
19

### 6. Math

Between 0 and 360 degrees, what are the two angles for which the tangent is negative 1?

135 and 315 degrees

### Bonus 6 - Science

Two 6-volt batteries are connected in series. These are connected in parallel to three resistors of 6 ohms, 12 ohms, and 12 ohms. Find the following:

1. The total voltage - 12 volts
2. The current through the 6 ohm resistor - 2 amperes
3. The total current - 4 amperes
4. The total resistance - 3 ohms

### 7. Health

What is the term for the medical condition in which an organ protrudes through an abnormal opening in the muscular wall surrounding the organ area? This is sometimes a result of excessive straining of muscles.

Hernia

### Bonus 7 - Literature

In what major works of world literature do you meet the following characters:

1. Phileas Fogg - Around the World in Eighty Days
2. Ali Baba - The Arabian Nights
3. Nora Helmer - A Doll's House
4. Inspector Porfiriy Petrovich - Crime and Punishment

## 8. Science

At the end of which period of the Mesozoic Era are dinosaurs thought to have suddenly become extinct approximately 65 million years ago?

Cretaceous

### Bonus 8 - Social Studies

Name the historical figures who were known by the following nicknames:

1. The Kingfish - Huey P. Long
2. The Great Commoner - Henry Clay
3. The Swamp Fox - Francis Marion
4. Blackbeard - Edward Teach

## 9. Literature

What play by Shakespeare, first produced in 1604, contains the characters Claudio, Angelo, Isabella, and Mariana?

Measure for Measure

### Bonus 9 - Math (calculation)

Factor the following expressions:

1.  $X^2 - 4X - 45 = (X + 5) \text{ times } (X - 9)$
2.  $4X^2 + 13X - 12 = (4X - 3) \text{ times } (X + 4)$
3.  $25X^2 - 289 = (5X + 17) \text{ times } (5X - 17)$
4.  $9X^2 + 3X - 20 = (3X + 5) \text{ times } (3X - 4)$

## 10. Social Studies

In what U.S. state can you visit Devil's Postpile National Monument and Lava Bed's National Monument?

California

### Bonus 10 - Literature

Name the poets who wrote the following lines:

1. "How do I love thee? Let me count the ways" - Elizabeth Barrett Browning
2. "Half a league, half a league, / Half a league onward." - Alfred Tennyson
3. "When a man hath no freedom to fight for at home, / Let him combat for that of his neighbors." - George Gordon Byron
4. "Hail to thee, blithe spirit! / Bird that never wert." - Percy Bysshe Shelley

*Blythe Spirit, by Noel Coward*