

### 1. Earth Science/Geography/Astronomy

The transform type is caused by motion parallel to the feature, the normal type is caused by stretches, and the reverse type is caused by compressions. Give this term defined as a fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are displaced relative to one another and parallel to the plane of fracture. Examples include the North Anatolian, Narrow Cape, and San Andreas.

ANSWER: Fault(s) (prompt on Shift)

### 2. Language Arts

(Note to moderator: The final word is pronounced egzillerrate.) Spell the word beginning with the letter E that is a synonym of enliven, cheer, gladden, refresh, invigorate, and stimulate. Spell the word exhilarate.

ANSWER: E-X-H-I-L-A-R-A-T-E

### 3. Geometry/Trigonometry (30 Seconds)

What is the cotangent of the quantity three pi over four?



ANSWER: -1 (do not accept 1)

### 4. United States History

Also known as the Dirty Thirties, it was publicized by, among others, Pare Lorenz, John McCarty, and the Farm Security Administration. Focused most heavily on Southwestern Kansas and the panhandles of Texas and Oklahoma, what name is given to the area afflicted by severe droughts during the 1930s?

ANSWER: (The) Dust Bowl

### 5. World Literature

Who wrote *Iphigeneia at Aulis*, which won him the Athenian dramatic festival prize posthumously? He was often a target of jokes by Aristophanes. Name this playwright of *Hippolytus*, *The Trojan Women*, *The Bacchae*, and *Medea*. Only eighteen of his over ninety plays are still known.

ANSWER: Euripides

### 6. Chemistry (10 Seconds)

Good examples include xylene, benzene, and turpentine, but the best example is water. They are usually clear and colorless liquids. What is defined as a substance capable of or used in dissolving or dispersing one or more other substances? The substance dissolved in it is called a solute.

ANSWER: Solvent(s)

### 7. Pop Culture

Which professional team moved to Kansas City in 1955 and left in 1968? They have won the World Series nine times, including 1989 and three times in a row in the 1970s. A focus of the book *Moneyball*, their current roster includes Mark Kotsay, Eric Chavez, Jason Kendall, Danny Haren, and Barry Zito.

ANSWER: (Oakland or Kansas City or Philadelphia) A's (or Athletics)

### 8. Calculus/Combinatorics (30 Seconds)

A game of bowling usually has ten frames. If you roll a strike in the tenth frame, then you get an eleventh frame. If you roll a strike in the eleventh frame, then you get a twelfth frame. There are never more than twelve frames. What is the average number of strikes that a bowler will get per game if he never gets a spare and gets a strike half the time?

ANSWER: 5.375 (or 5 3/8 or 43/8)

#### 9. Nonfiction

What makes a perfect parent? Where have all the criminals gone? Why do drug dealers still live with their moms? What do schoolteachers and sumo wrestlers have in common? These questions are all chapter titles in what 2005 book by Stephen Dubner and Steven Levitt? It is subtitled *A Rogue Economist Explores the Hidden Side of Everything*.

ANSWER: *Freakonomics*

#### 10. Technology

What common two-word phrase was coined by John McCarthy, the man who invented the LISP computer language? This phrase now represents a field of study that includes branches such as Representation, Inference, Learning, and Common Sense. It is an attempt to model aspects of human thought on computers.

ANSWER: Artificial Intelligence (accept AI or Machine Intelligence)

#### 11. Music

His first album contained concertos by Haydn, Mozart, and Hummel, and his first album to win a Grammy Award was titled *Black Codes From The Underground*. Other projects he has worked on include *Blood on the Fields*, *Jazz at Lincoln Center*, and *Jazz for Young People*. Name this trumpeter born in 1961, the younger brother of Branford.

ANSWER: (Wynton) Marsalis

#### 12. Physics (10 Seconds)

It is minimized at stable equilibria. It can be given by the formulas negative big G times m sub one times m sub two divided by distance, one half times the spring constant times the displacement squared, or mass times little g times height. Name this type of energy based upon positions within conservative forces.

ANSWER: (Gravitational) Potential (Energy) (prompt Energy)

#### 13. United States Literature

Which novelist has created the characters Taylor McAden, Mike Harris, Jamie Sullivan, Landon Carter, and Noah Calhoun? His first few novels were never published, but he was picked up by Warner Books and has had several best sellers starting in 1996. Name this author whose books have inspired the movies *A Walk To Remember*, *Message In A Bottle*, and *The Notebook*.

ANSWER: (Nicholas) Sparks

#### 14. Art/Architecture

The background of this painting shows a painted chest and flowery wallpaper. Flowers can also be seen on the carpet and the white pitcher at the bottom of the picture. Name this painting of a mother washing her child's feet by Mary Cassatt.

ANSWER: (The Child's) Bath (do not accept The Bathers)

#### 15. World History

When she was three years old, whose mother was executed for treason, incest, and witchcraft? Her father died when she was thirteen, after which she lived with Thomas Seymour and Catherine Parr. At the age of twenty, she was briefly imprisoned in The Tower of London. After her half-brother and half-sister died, she became the Queen of England in 1558. Name this final monarch of the Tudor dynasty who ruled for 45 years.

ANSWER: (Queen) Elizabeth I (prompt on Elizabeth)

#### 16. Biology

Examples include *Chrysiogenes arsenatis* and *Nitrosomonas europaea*. Any organism that uses photosynthesis also fits the definition. Give this term for an organism capable of synthesizing its own food from inorganic substances by using light or chemical energy.


ANSWER: Autotroph(-ic or -s)

#### 17. Religion/Mythology

Meaning 'received', its primary texts are sometimes considered to be The Book of Raziel The Angel, The Book of Creation, The Bahir, and The Zohar. An explanation of the causes of events in The Torah, it is the focus of Jewish mysticism. In 1984, a center focused on the teachings of these works was created, and this center has attracted several famous non-Jews such as Mick Jagger, Britney Spears, and Madonna.

ANSWER: (The) Kabbala

#### 18. Algebra (30 Seconds)

Multiply the quantity the square root of eleven plus the square root of five end quantity times the quantity the square root of eleven minus the square root of five. 

ANSWER: 6 (do not accept the square root of 6)

#### 19. Current Events

This symbol was first used in 1877 during the Russo-Turkish War and was originally used by Egypt and the Turkish Republic. It is now used widely in 31 countries. It represents a group that often plays a central role in humanitarian relief efforts, including current efforts in Pakistan. It is closely aligned with the Red Cross but is used in majority Muslim nations.

ANSWER: Red Crescent (prompt Crescent)

#### 20. British Literature

Which Shakespeare play contains an induction in which a big drinker named Christopher Sly is treated like a lord and told to watch the play? The main body of the play contains a wager between a few husbands as to whose wife is the most docile. Name this work largely about Petruchio and Katharina.

ANSWER: (The) Taming Of The Shrew

TIEBREAKER: To break a tie, use the following questions in order. The first correct answer wins the match.

The Home Insurance Company Building in Chicago in 1885 was the first building to support the walls entirely using what material as a frame? Name this metal which has been used in most skyscrapers. It is an alloy of iron and carbon.

ANSWER: Steel

It was caused by *Phytophthora infestans*, a fungus that destroyed lumpers. John Russell and Robert Peel received much of the blame for it. Typhoid fever, cholera, and dysentery were responsible for most of the deaths, and starvation played a large part as well. Name this disaster during the late 1840s that led to increases in the United States population and major decreases in the population of Ireland.

ANSWER: (Irish) Potato Famine (accept Gorta Mor, Great Famine, or Great Hunger, prompt Irish Famine or Famine)

Which chemical element has atomic mass 4.00, atomic number 2, and atomic symbol He?

ANSWER: Helium (Prompt He)