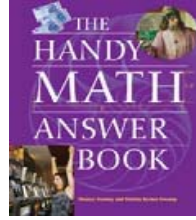


Do the Math Quiz

Put the number of the correct question next to the answers below. Questions and answers converge on page 2.



The Answers

____ The spacing of sunflower seeds and the shape of the chambered nautilus shell are said to follow this rule.

____ 1 followed by 100 zeros

____ 1

____ The displacement between two points.

____ Direct current flowing from a conductor is directly proportional to the potential difference between its ends.

____ 3

____ This would use a combination of symbolic logic, numerical analysis, electrical engineering, and a mechanical version of human thought processes.

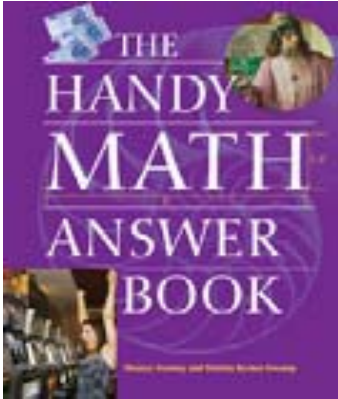
____ The supposed increase in brain development that children under age three experience when they listen to ...

____ A huge (literally monumental) calendar.

____ 6

The Questions

1. What is a googol?
2. How many countries have not officially adopted the metric system?
3. What was the original use of Stonehenge?
4. What is the golden ratio?
5. What is the "Mozart Effect"?
6. What is a vector?
7. What is Ohm's Law?
8. What was the Turing machine?
9. What is a perfect number?
10. While on my way to St. Ives, I met a man with seven wives. Each wife had seven sacks; each sack had seven cats; each cat had seven kits. Kits, cats, sacks, wives: How many were going to St. Ives?



What is a googol?

The "googol" is the invention of Milton Sirotta, the eight-year-old nephew of mathematician Edward Kasner (1878-1955), who once asked the young boy to name the number 1 followed by 100 zeros.

What countries have not officially adopted the metric system?

Only 3: The US, Liberia (western Africa) and Myanmar (formerly Burma, in Southeast Asia).

What was the original use of Stonehenge?

Built between 2950 and 1600 BCE., historians believe the entire structure represents a huge (literally monumental) calendar.

What is the golden ratio?

The golden ratio is associated with the balance between symmetry and asymmetry used in art and design. Two quantities are said to be in the golden ration if "the whole is to the larger as the larger is to the smaller." The spacing of sunflower seeds and the shape of the chambered nautilus shell are said to follow the rule of the golden ratio.

What is the "Mozart Effect"?

The Mozart Effect is a term coined in the 1950s by physician and researcher Alfred A. Tomatis (1920-2001). It refers to the supposed increase in brain development that children under age three experience when they listen to music composed by Wolfgang Amadeus Mozart (1756-1791).

What is a vector?

A vector is considered to be an element of a linear or vector space. A vector is different from a point, as it represents the displacement between two points, not the physical location of a point in space. Vectors also define a direction; points do not. Vectors are usually represented by a line segment in a specific direction on a graph, with an arrow at one end of the segment.

What is Ohm's Law?

Ohm's Law states that direct current flowing from a conductor is directly proportional to the potential difference between its ends. First summarized by German physicist Georg Simon Ohm (1789-1854), it is usually seen in formula form as: $V = IR$ (or $I = V/R$), in which V is the potential difference (voltage), I is the current (sometimes written as i), and R is the resistance of the conductor. This can also be written in terms of electric quantities (voltage = current X resistance) and with units of measure (volts = amps X ohms).

What was the Turing machine?

In 1937, while working at Cambridge University, English mathematician Alan Mathison Turing (1912-1954) proposed the idea of a universal machine that could perform mathematical operations and solve equations. This machine would use a combination of symbolic logic, numerical analysis, electrical engineering, and a mechanical version of human thought processes. His idea became known as the Turing machine, a simple computer that performed one small, deterministic step at a time. It is often thought of as the precursor to the modern electronic digital computer, and its principles have been used for application in the study of artificial intelligence, the structure of languages, and pattern recognition.

What is a perfect number?

A perfect number is a natural number (or positive integer) in which the sum of its positive divisors is the number itself. For example, 6 is a perfect number because its divisors are 1, 2, and 3 ($1 + 2 + 3 = 6$). The next three perfect numbers are 28 ($1 + 2 + 4 + 7 + 14 = 28$), then 496, then 8,128.

While on my way to St. Ives, I met a man with seven wives. Each wife had seven sacks; each sack had seven cats; each cat had seven kits. Kits, cats, sacks, wives: How many were going to St. Ives?

One. (The narrator was on his way to St. Ives. The people he met were presumably going the other direction, away from St. Ives.)