

#### **Test for Profound Intelligence**

The World's Hardest I.Q. Test

Designed by David Smith

The Test for Profound Intelligence was created to measure I.Q.s at the apex of human potential. It tests verbal, numerical, spatial and logical reasoning. This test is most suitable for highly intelligent individuals who will put in a great deal of effort and time into every problem. For those rare individuals who persevere, the reward could be great indeed.

Reference aids are permitted and encouraged, except (and including user-written) computer programs. There is no time limit. Discussing the test with others at any point in time is strictly prohibited. Do not publish any portion of this test. Additions or revisions to a submission once it has been sent are not allowed. Half-points will be awarded for partially correct solutions. No penalties for incorrect answers. For spatial items, draw the answer as clearly as possible to remove ambiguity, and ignore slight irregularities at the pixel level.

Some items have multiple valid solutions due to their nature; it is only necessary and permitted to submit one answer for each question. Moderate degree of knowledge is required for some problems, but little skill in mathematics is necessary. Explanations of answers are not required but welcomed.

Analogies are to be read as WHITE: (is to) BLACK:: (as) UP: (is to) DOWN

Send answers to David Smith via e-mail: djs314djs314@yahoo.com. Include your name, age, sex, and previous results on supervised and high-range I.Q. tests. There is a (USD) \$10 scoring fee, which should be sent via PayPal to the same e-mail address. Correction is free for Rainbow Bridge members.

Current norms are available online at: www.seti.co.nr/tpinorms.html

The 30 demons of this Underworld are ready for your arrival. Your journey into their lair of endless suffering begins here. Only the most profoundly intelligent souls will pass through unscathed. Will you be the one to claim victory against the Dark Overlord, ruler of this dungeon of misery, or will your failure doom you to spend Eternity kneeling at his throne, begging for the revelation of his Ultimate Secret?

1. 56023091 : 45 :: 48074025 : ? 2. MULTIPLICATION: FAST FOURIER TRANSFORM:: NUMBER OF DIGITS:? 3. 28293137, 125149269989, ? 4. CLIP: 877:: ILL:? 5. 4: CQR:: 3:? 6.  $E^3: \{4,3,4\} :: H^4: ?$ 7. 8. GREATER: OR:: INFINITY:?

9.

You have a deck consisting of 1073741824 unique cards. You shuffle the deck as follows: You take the top and bottom cards of the deck and place them on the table, keeping them in their previous order, to start a new pile. You then take the top and bottom cards from the remaining portion of the deck and place them on top of the newly started pile. You continue in this manner until all of the cards are gone from the original pack. You then repeat this shuffle with the new pack. How many shuffles are required for the entire deck of cards to return to its original order, each card being in the same position as it was before you started?

10.

V, VI, XIX, XLIII, ?

11.

TEN-FOUR, GOOD BUDDY!: 0.6021:: \$2.65536:?

12.

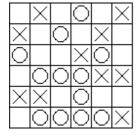
What is the common feature between these words?

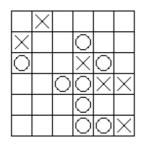
ECHO WONDER ERASE TRISECT LUMP KRYPTON EPICYCLOID AJAR FRIGID NOESIS

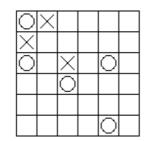
13.

PICK: ROFREVITSFE:: EEL:?

14.







?

15.

Two mathematicians, Alice and Bob, are given a challenge to test their intelligence. They are given the following instructions. There is a rectangular room which has only one door leading in and out. In the center of the room, directly in front of the door, is a pedestal, in the shape of a rectangular prism. The pedestal is 4 feet tall, and 1 foot wide and long. The pedestal's surfaces are parallel to the walls of the room. On top of the pedestal is a cube, measuring 1 foot in each dimension. The cube is placed on the pedestal so that it fits perfectly on top; no part of the cube hangs over the sides of the pedestal. Each face of the cube is a different color. Alice and Bob are given a list of colors, and are told that the colors of the faces of the cube are among those on the list. First Alice will be brought to the room. She is to pick up the cube, examine the six faces, and must replace the cube on top of the pedestal, so that no part of the cube hangs over the sides of the pedestal. She is allowed to choose the orientation of the cube as she replaces it, but can alter no other part of the room or leave any other indication of her presence there. Bob will then be brought to the room, and will have no communication with Alice after the challenge begins. He is not allowed to touch the pedestal or cube, and can only observe the five visible faces of the cube. The goal of the challenge is for Bob to then name the color that he cannot see, on the base of the cube. After Alice and Bob are given the list of colors and preceding instructions they can form a plan, but once the challenge begins no communication will be allowed between them. Your task is to both identify the maximum number of colors on the list in which Alice and Bob can find a strategy that guarantees their success, and to find such a strategy for that number of colors.

16.

LV: 24.0000 :: VCCCXLIII: ?

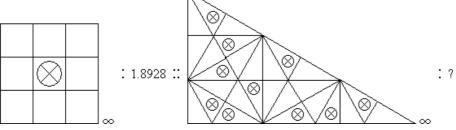
17.

ATE A: SENT:: PIE:?

18.

3352463323552444 : XXOOXOOXXOXXOOXX :: 3343455446542543 : ?





20.

Alice and Bob are two mathematicians who have never met. Alice specializes in the construction of Latin squares. A Latin square is an n x n square grid filled with the integers 1 to n, such that each number occurs exactly once in each row and exactly once in each column. Alice emails Bob and tells him that she has constructed a 15 x 15 Latin square with extraordinary properties. Bob wants to purchase this Latin square and all rights of its use from Alice, hoping to capitalize on its uniqueness. However, they have a problem: They work for two opposing government agencies and hence neither can trust the other. Furthermore, they are forbidden by their respective agencies to meet, and must communicate entirely through email. They are also unable to send pictures or attachments of any kind, and must only talk to each other through text-only messages. Alice tells Bob she can prove that her Latin square is extraordinary. She does not want to reveal the Latin square to Bob until she has received his payment, so she cleverly draws a 15 x 15 blank grid on paper, and fills in the numbers for 30 squares of her choice from the Latin square. In this way she forms a partially completed Latin square, with 30 squares filled in which correspond to her Latin square. She emails Bob, and describes the partially completed Latin square to him, by numbering the squares 1 to 225 and telling him the numbers in the 30 chosen squares only. Bob can tell from the partial description that Alice's Latin square satisfies the properties she has claimed it holds. However, he raises a dispute, saying it is possible that Alice simply described any numbers satisfying the unique properties, and that she does not actually possess a Latin square which matches the partially completed one. As mathematicians, both Alice and Bob know that Bob alone can never determine one way or the other whether there exists a Latin square which matches the partially completed one, as it would take a supercomputer more than billions of years to perform the calculations necessary. (There are about the same number of 15 x 15 Latin squares as there are atoms in the observable Universe, and there is no efficient algorithm to fill in partially completed Latin squares.)

Your task is to come up with a plan which will allow Bob to purchase the Latin square from Alice, given the following three conditions:

- 1. Alice refuses to give Bob any information on the identities of the 195 concealed squares until she receives his payment.
- 2. Bob refuses to pay until he is convinced that Alice possesses a Latin square which matches the partially completed one, and thus has the extraordinary and unique properties Alice claims it has.
- 3. They must communicate entirely through text-only email, without providing any pictures, downloads of any programs, or links to any part of any website. However, Alice and Bob can send each other encrypted messages using their secure email client. Once an encrypted message is sent, it cannot be altered. The only way to open an encrypted message is through authorization of the sender, who sends the recipient a unique password (it is different every time) which will decrypt the email.

What should they do?

21. 13101117, 47352237, ?, 130119019314 22. ODD FRIGID GOGGLE MASJID : ICY GAWK MOSQUE :: NONPRIME HATCHET boom RECORD INLET:? 23. PIECE: 24.441.36.448.180.1152.8.1920.160:: CH. CHIP PIE: ? 24. 25. 7, 3, 11, 2, 1, 4, 3, ?, 2, 1, 3, 11111111111, 2, ?, ?, ?, ?, 5, ?, 222 26. 425 : C.CQR :: 3225535 : ? 27. 28. 5x5x5 IDENTICAL: { 5Nx1; 2x3x2(00,01,00,11,01,01): 4 WAYS; 4 WAYS::: 5Yx1; 2x3x2(00,00,01,10,10,11): 1264 WAYS; ? WAYS} :: 3x3x3 DIFFERENT:

 $\{3Lx1, 4Lx1, 4Sx1, 4Tx1, 2x2x2(00,01,01,11), 2x2x2(00,01,10,11),$ 

2x2x2(00,01,11,01): ? WAYS::?,?,?,?,?,?,?,?:1 WAY}

29.

**EXAMPLE:** 

MP:  $(\forall \$(\forall; \exists)); \exists$ 

**RULES:** 

! IS NONCOMMUTATIVE ∀=ABC...N;"∀=N...CBA ∀=ABC...N;∀"=BC...N %∀\*!∀ ∀!∃;@∀!∃∃ ∀!∃;&∀!"∃ ∀!∃;#∀!∃" ∀!∃;((^∀!%∃)\$(~∀!\*∃)) ∀!("(("(∃∃))"))("(("(∃∃))"));

 $\forall$ !("(("( $\exists$ 3))"))("(("( $\exists$ 3))"));((( $\forall$  AS ANSWER: YOU WILL RECEIVE NO CREDIT FOR THIS QUESTION);( $\exists$  AS ANSWER: YOU WILL RECEIVE A HALF-POINT FOR THIS QUESTION))\$(( $\forall$  AS ANSWER: YOU WILL RECEIVE A HALF-POINT FOR THIS QUESTION);( $\exists$  AS ANSWER: YOU WILL RECEIVE NO CREDIT FOR THIS QUESTION)))

ANSWER?

30.

In front of you, sitting on his 100-dimensional throne, is the Dark Overlord. He exists on a higher plane of reality, and so is incapable of interacting directly with beings residing in ordinary space-time such as yourself. He can only hear the words from your mouth, which he understands, but your limited perception of his reality does not allow him to be seen, heard, or sensed in any way by you. He can send one of two signals from his throne at a time into your universe to be heard by you. One signal consists of a very high note which lasts for one second, and the other one a very low note which lasts for one second.

The Dark Overlord possesses an Ultimate Secret, whose significance is known only to him. His Ultimate Secret is represented as a set containing either positive integers, other sets, or both. If this set contains other sets, those sets contain either positive integers, other sets, or both. This process continues; any set at any level of the hierarchy of sets contains either positive integers, other sets, or both. It is not possible to have a set containing a set containing a set, *ad infinitum*, but it is possible to have an infinite number of sets, among which there is no set or sets which contain the maximum number of nested sets. The size of this set can be virtually any cardinal number. Thus, there is no limit on how complex the Ultimate Secret can be.

Your goal is to determine this Secret, while the Dark Overlord is trying to prevent you from doing so. You are only allowed to ask the Overlord yes/no questions in trying to accomplish your task. He must respond to each question, and does so by sending one of his two signals. After he hears your question, he either chooses the low note to mean yes and the high note to mean no, or the high note to mean yes and the low note to mean no, for that question only. He also decides to either tell the truth or lie for each question after hearing it. If at any time you ask a question which cannot be answered by the Dark Overlord without him contradicting himself, he will either send the low note or the high note, ignoring the question entirely. He will also respond randomly to any question which refers to actual or theoretical events under your control or is self-referential in nature. A question that is self-referential in nature entails both a question referencing itself or the Overlord's response to it either directly or indirectly, and also an embedded question referencing itself or the Overlord's (hypothetical) response to it in the same manner. An indirectly self- referential sentence is one that refers to itself in any manner, often by replacing the phrase "this sentence" with an equivalent expression.

The Dark Overlord has given you an infinite amount of time to accomplish your task. More specifically, the set of both questions asked by you and responses by the Overlord can be of any cardinality. (You can imagine asking an uncountable number of questions, if necessary, by associating to each question an ordinal number, up to the ordinal which represents the cardinality of the number of questions. There may also be simpler ways to do so, depending on the situation.) During your questioning, The Dark Overlord is keeping track of the following cardinal numbers:

 $B_1$  = The number of questions.

 $B_2$  = The number of questions in which he responded with the low note.

 $B_3$  = The number of questions in which he had the option of truthfully responding in the affirmative.

 $B_4$  = The number of questions in which he had the option of truthfully responding in the negative.

 $B_5$  = The number of questions in which he had the option of falsely responding in the affirmative.

 $B_6$  = The number of questions in which he had the option of falsely responding in the negative.

A strategy exists which will eventually allow you to determine the Ultimate Secret. Describe such a strategy in which the following six conditions hold, with (1) being of highest priority, and (6) being of lowest priority.

- (1)  $B_1$  is as small as possible.
- (2) Given (1),  $B_2$  is as large as possible.
- (3) Given (2),  $B_3$  is as large as possible.
- (4) Given (3),  $B_4$  is as large as possible.
- (5) Given (4),  $B_5$  is as large as possible.
- (6) Given (5),  $B_6$  is as large as possible.

You must determine the Ultimate Secret with certainty, regardless of its identity. You must fulfill the six conditions above as well or you fail. The Dark Overlord will try to ensure your failure through any means necessary, which includes influencing the above six conditions.

This concludes the Test for Profound Intelligence.
You will receive a score report as soon as possible.
Feel free to send feedback to djs314djs314@yahoo.com, and thank you for taking my test.

-- David Smith, Author of TPI

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A GATEWAY OF IDEAS!