

ANDROS

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STRATEGIC THINKING ASSESSMENT

Here are ten problems and 'teasers'. Please attempt each one even if you've experienced the challenge, or something similar, before. Time yourself on each one and record both the answer and the time taken. Take as long as you wish to complete the entire series of questions, but do record your time for each individual problem - this will feature in the scoring. Do not refer to the scoring profile before you've responded to all of the questions.

1. The Arab Horsemen -

A certain Arab sheik had two sons, both of whom claimed to be the best horseman in the land. They competed, argued and fought over the issue frequently, but the results were always inconclusive.

The father decided to settle the matter for once and for all. He summoned his two sons and informed them that there would be a race. The race would take place between the encampment and a city one hundred miles away, across the burning, scorching, arid desert. The victor would inherit everything, and also become the next leader of the tribe. For the loser, banishment and poverty.

Since the sheik did not want the tribe to be ruled by someone who could not think - just ride a horse - he announced that this would be a race with a difference. The winner would be he whose horse's nose was the last to cross the finish line, not the first as is usually the case. Both sons were so informed.

Being dutiful Arab sons the two brothers set out for the distant city, each trying to ride more slowly than the other. Eventually, it occurred to them that if they were to persist with this course of action, they would die of exposure.

A wise man approached them and counseled them both together. Following this, they mounted up and took off for the city like 'greased lightning'. What advice did the wise man give them?

Answer: _____

Time: _____

2. The Three Women -

Three elegantly dressed women are standing closely together. One is in tears, but she has never been happier. The other two are smiling, but they've never been more miserable. What is going on?

Answer: _____

Time: _____





3. Mathematical Modeling -

Consider the following series of numbers:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, >>>

What is the natural phenomenon that this series models or represents? Give at least four examples from large to small.

Answers: _____

Time: _____

4. A Number Pyramid -

Reflect on the following numbers line by line. What is the pattern that you observe? What is the next line (at the bottom of the pyramid)?

1
11
21
1211
111221
312211
13112221

Time: _____

5. The Cyclists and the Fly -

Two persons, forty kilometers apart, start out at precisely the same moment to cycle towards one another. The first cyclist travels at 20 km/hour, and the second at 10 km/hour. At the moment of departure there is a fly, sitting on the hat of the first cyclist, which takes off and flies toward the second cyclist at 24 km/hour. On reaching the second cyclist, who has progressed some distance towards the first, the fly turns around and flies back toward the first cyclist without stopping. This first cyclist has, of course, traveled some distance towards the second person. The fly then returns again to the second cyclist, back to the first, and so on, until the two cyclists meet. What is the fly's name, and how far has he flown by the time the two cyclists meet?

Answers: _____

Time: _____

6. The Merchant's Daughter -

In medieval Europe a merchant owed a moneylender a large sum of money. When the time came to settle the debt, the merchant was unable to pay. The moneylender reminded the merchant of the law which stated that if you did not pay your debts you were put in jail, your assets were seized by the creditor and your family was evicted - no welfare State! The moneylender had a suggestion however. He said, "I'm in the market for a mistress, and you have a beautiful daughter, Juliet. If she will become my mistress I will forgive you the debt - no jail, you keep your home and business, and I'll give her a good home." Needless to say, neither the merchant nor Juliet were very keen on the proposal. They went to meet the moneylender, in his garden, to express their concerns.

Continued..





The moneylender, being even more anxious to procure the young lady, had another suggestion. "Let's allow Lady Luck to decide," he said. "Into this old money bag I'm carrying, I'll put two stones from the pathway, a black stone and a white stone. Your daughter must choose. If she chooses the white stone, I'll forgive the debt and she does not have to become my mistress; if she chooses the black stone, I'll forgive the debt and she must agree to become my mistress; should she refuse to choose, for any reason whatsoever, at midnight tonight the merchant will go to jail, I'll take the house and business in settlement, and she is 'on the street'.

With no alternative, the merchant and Juliet agree to the terms. However, as the moneylender picked up the two stones the sharp-eyed young lady noticed that, instead of a black and a white stone, he placed two black stones in the bag. What would you advise her to do?

Answer: _____

Time: _____

7. The L-Shaped Office Space -

You are the manager of a rapidly expanding company which has recently decided to add more staff and take on additional office space within its current building. Unfortunately, the available space in the building has an awkwardly shaped floor area, as shown:



Your task is to divide this space into four offices, identical in size and shape, for junior executives of equal status in the organization. You may use straight partitions only, and each office has to be equipped with the same amount of standard furniture. The construction crew are waiting, and you have no ruler or other measuring device to assist you right now. Show the plan for the four new offices.

Answer

Time: _____

8. Four Equilateral Triangles -

Take six matches or pencils of equal length and form four equilateral triangles of the same size as that which can be formed by using three of the matches / pencils on the table top in front of you. You may not break the matches / pencils, nor assume sides which do not, in fact, exist.

Answer

Time: _____





9. School Textbooks -

As Principle of a school with 1000 students you must approve the ordering of new textbooks for each course. Students may elect to take either languages or a science subject. This semester, you are advised by the languages department, 400 have requested to study French and 300 have elected Spanish. One hundred and fifty of the language students will study both French and Spanish. How many science textbooks must you order to ensure that each student not electing languages will have one?

Answer: _____

Time: _____

10. The Political Prisoners -

Six political prisoners escape from a labor camp which lies deep in the snow-covered tundra far from the nearest town. After traveling for several days, with the police and guards never far behind, they arrive at a deep, wide river which marks the frontier between their own country and neutral territory where they will be safe from recapture. There's no boat, bridge or ford, and nothing on their side of the river from which a raft or flotation device could be constructed. Only one of the six is able to swim and, in his weakened condition, he knows it will be possible for him to make a single crossing of the river on his own.

On the other side of the river, across the snow-covered banks, is a forest which could provide plenty of wood for raft building. However the pursuers are just thirty minutes away, there's no time for one man to cross over, build a raft, and then return to recover his colleagues. There are a few small caves in the bank on this side of the river which could provide a temporary hiding place, but any search would lead to rapid discovery and immediate execution. What is the best plan of action?

Answer:

Time: _____

