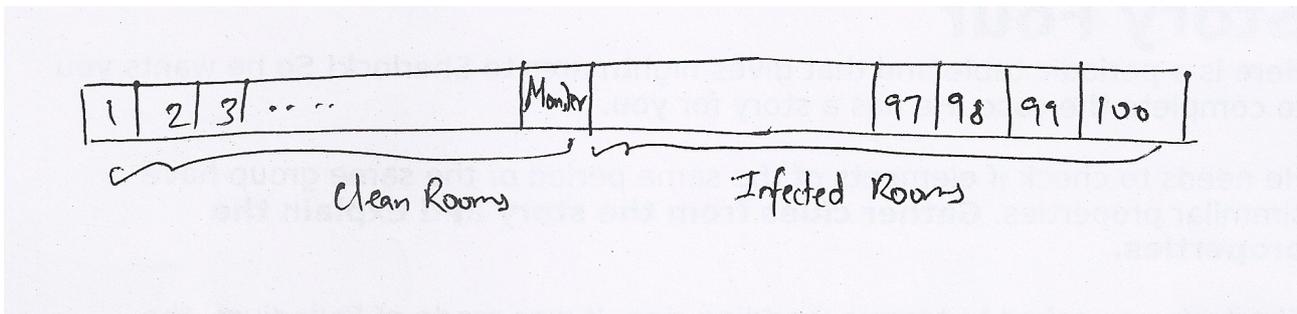# Sciensation

That's when science gets addictive!

STORY ONE

There is a hotel with hundred rooms. A Monster is sitting in one of the rooms. All the rooms to the right of the monster are infected with a foul gas. Suggest a strategy to find the monster by opening minimum number of doors.

Note: Luck will always be against you.

Hint: If a room is clean, the monster must be on the right side.

STORY TWO

Sir Jadeja and Rajnikanth are running towards each other. The first one to reach the flag gets the one rupee.

However if none of them decides to stop, they running into each other and then into the nearest hospital. They pay a bill of Rs1000

	Sir Jadeja stops	Sir Jadeja doesnt stop
Rajni stops	Rajni: 0 Sir: 0	Rajni: 0 Sir: 1
Rajni doesnt stop	Rajni: 1 Sir: 0	Rajni: -1000 Sir: -1000

If you don't run you don't get anything. But if everybody runs, everybody pays a hefty medical bill! This is known as the game of chicken. The guy who stops is said to have "chickened" out!

When two competing companies are playing an ad-war, it is a game of chicken. They have two strategies- advertise or don't advertise. Explain why it is the game of chicken.

Bonus Question: The companies needn't have equal advertising budgets, draw an analogy with the above game (Rajni might be heavier than Sir).

Story Three

Jaadu has just arrived from mars. He has got seven fingers and uses a number system with base 7.

Place values are powers of 7 i.e. $9854 = (9 * 7^3) + (8*7^2) + (5*7) + (4)$

Question1: Is 16 an even number, according to Jaadu's system?
Question2: Classify even numbers in Jaadu's number system
Question3: Give a divisibility test for seven, in Jaadu's number system/
Bonus Question: Divisibility test for three remains the same in Jaadu's system, but why?

Story Four

Here is a periodic table and that gives nightmares to Sherlock! So he wants you to complete the case. He has a story for you.

He needs to check if elements of the same period or the same group have simmilar properties. **Gather clues from the story and explain the properties common to elements of a group.**

Sherlock was asked to trace a wedding ring. It was made of Palladium, the rarest metal used to make wedding rings (next is Platinum). His crime-partner was identified as the same person who had stolen Copper coins from Caine's collection. However, Roger was found dead and his autopsy report read "Bismuth poisoning".

Killing Roger can't be easy. He had a special weapon. It was made of Vanadium steel and more importantly Niobium which he stole from rocket nozzles. It also contained Tantalum which is usually added to objects exposed to high temperatures. Robin might have killed Roger.

Sherlock proceeded to Caine for help. Caine collects rare coins and his collection also includes an antique Antimony coin. Chinese Government had discontinued them as Antimony is soft and Toxic. He also has lots of stories to tell. The coin stolen by Robin was of the times of bimetallism- monetary value was expressed as equivalent to both a certain amount of gold or silver.

Caine's wisdom did help Sherlock. Firstly Caine enlightened Sherlock about the stolen coin. It was not a copper coin but made up of Tin or Lead, one of the oldest elements known to man. Caine predicted that Robin must have a lot of rashes due to the allergies he was bound to develop as he chose the inexpensive nickel jewellery. This was confirmed through Roger's autopsy report.

Identify the properties common to these groups of elements.
Platinum: Pt Palladium: Pd Nickel Ni
Antimony: Sb Bismuth: Bi
Tin: Sn Lead: Pb
Vanadium: V Niobium: Nb Tantalum: Ta
Copper: Cu Silver: Ag Gold: Au

Periodic Table of the Elements
© www.elementsdatabase.com

- ■ hydrogen
- ■ alkali metals
- ■ alkali earth metals
- ■ transition metals
- ■ poor metals
- ■ nonmetals
- ■ noble gases
- ■ rare earth metals

Question Five:

You are given observations. You need to come up with a hypothesis explaing the **observation and experiment** which can falsify the proposed hypothesis.

1- When it rains, clouds are usually dark.
2- When you speak long sentences, your doggie starts moving his ears.
3- Keyboard has letters in the order QWERTY and not ABCDEFG which may have been more convenient to a newbie.

Example:

Observation: Raju has been sitting in the second bench for the last one week.

Hypothesis: Raju always chooses the bench closest to the board.

Reasoning: First bench is usually occupied, so Raju chooses the next best bench- the second bench.

Experiment: Make sure nobody sits in the first bench. If Raju sits in the second bench, then your hypothesis is falsified.

Please remember that hypothesis is not proven, it is falisified. You would trust Theory of Gravitation till the day apples start going up!

THANK YOU FOLKS!
We hope that you enjoyed the quiz. Please do like us on facebook, to help us get going!
We would be glad to take your doubts, suggest more interesting stories or help you with cool experiments. Drop in your queries to sciensationmedia@gmail.com or ping us on facebook.