Interesting Puzzles

Riddles

1. Study this paragraph and all things in it. What is vitally wrong with it? Actually, nothing in it is wrong,but you must admit that it is most unusual. Don't just zip through it quickly,but study it scrupulously. With luck you should spot what is so particular about it and all words found in it. Can you say what it is? Tax your brains and try again. Don't miss a word or a symbol. It isn't all that difficult.....

2.A little boy living in the 10^{th} floor of a multi-storied building is seen always taking the lift from the 10^{th} floor down to the ground floor while going to school in the morning.However, in the evening he goes upto the fifth floor and then walks up the remaining floors by staircase to his flat at 10^{th} floor.Why does he do so?

Logical

3. There are three boxes containing two marbles each. The first contains two white marbles,the second contains one white and one black and the third contains both black marbles. Each box also has labels such as **WW** , **WB** , **BB** . However, someone switches these labels such that all the three labels are wrong at present. You are allowed to open a box [without looking into it] and pull-out one marble at a time,look at it and then return it back to its container.Like this you are to find out and rectify the labels so that all labels are correct. How many marbles will you pull out and how will you do it.

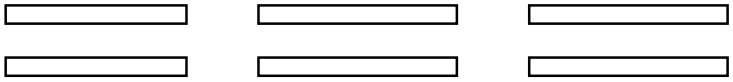
Geometrical

4. Make four equilateral triangles with six match sticks of equal lengths.

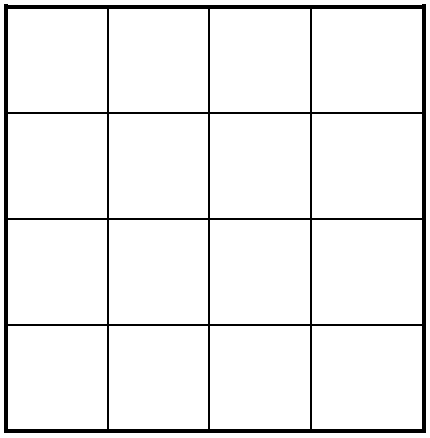
Mechanical / Positional / Shunting

5. Three beautiful ladies have for husbands three men who are young,gallant and jealous. The party are travelling and find on the bank of a river,over which they have to pass,a small boat which can hold no more than two persons. How can they cross the river ,it being agreed that ,in order to avoid scandal, no woman shall be left in the society of a man unless her husband is present. Min. number of passages to be found.

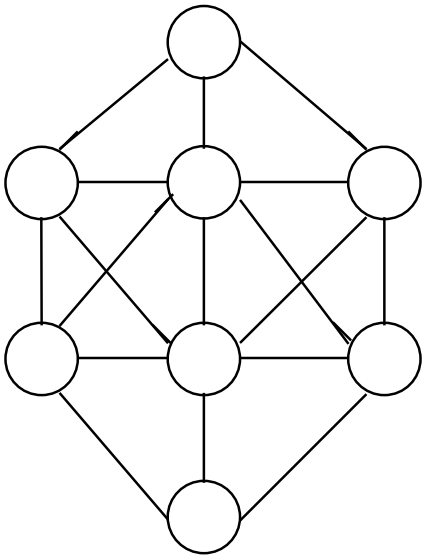
6. Arrange six cigarettes so that each one touches the other five.



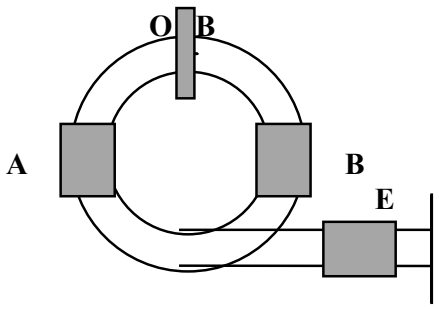
7. There are 4 Blue, 3 Red, 3 Green, 3 Yellow & 3 White counters which are to be placed on each of the 16 squares so that no two counters of the same colour are on squares touching [even diagonally]. Write B,G,R,Y&W as appropriately in the figure below.



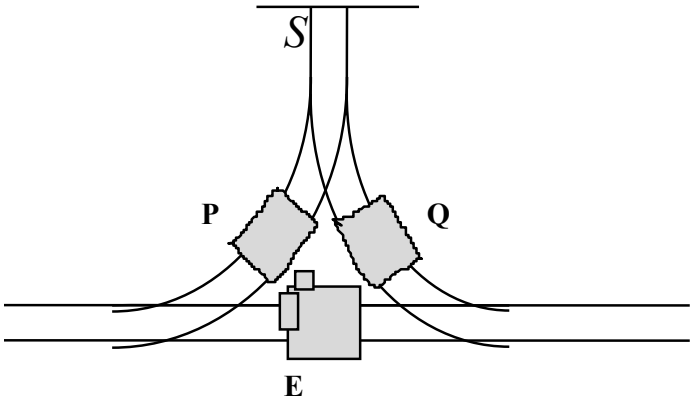
8. Place numbers '1' to '8' in the eight circles in the diagram below such that no two consecutive numbers are directly connected by the lines given.



9. The following Railway track has bogies **A** and **B** and engine **E** placed as shown. An overbridge **OB** is located as shown under which the engine can pass but not the bogies. **A** and **B** are required to be interchanged by the engine **E** which should return to its original place in min. number of moves.



10. Try the following shunting problem with three variants.



In all the cases find the min.number of moves by which engine **E** will move the bogies **P** and **Q** so as to interchange their positions and return to its original position if :-

[a] the section S can only hold either one of the bogies [P or Q] but not the engine.

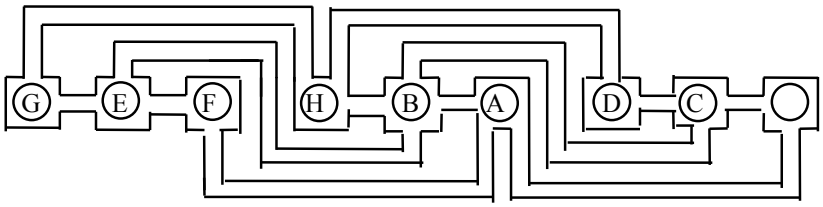
[b] S can hold only one of either bogies or the engine.

[c] Same as [b],but in addition the engine must be left in the same position as well as direction as indicated by its extra projections.

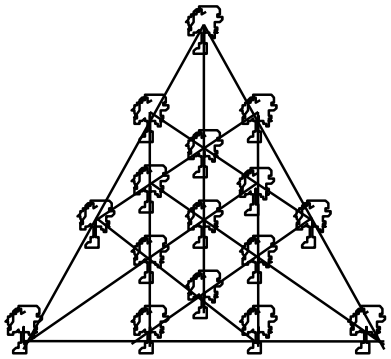
11. Twelve spherical balls of identical appearance and weight were produced but one of which tuned out to be defective,albeit only in weight, being marginally non-standard [**may be less or more**].The defective ball having got mixed with the others was required to be detected with a simple weighing balance.In how many min.number of weighings can this be done and how?. You must also find whether the defective ball weighs **more or less** .

12. Here is a clue for the above puzzle [11] that the min. number of weighing are three. Among how many max. such balls can a defective one be detected if you are allowed :- [a] four weighings. [b] five weighings.

13. The following figure shows the plan of nine prison cells with interconnections as shown. Eight prisoners having names A,B,C,D,E,F,G&H are lodged in cells as shown. The present order of the prisoners being G,E,F,H,B,A,D,C you are to get the order A,B,C,D,E,F,G,H in minimum number of moves. Each move can shift a prisoner from his present cell to a connected empty cell . Moves can simply be recorded like C,B,E, etc. [ie,C to empty cell,B to the now empty cell,E to ...etc.].The last cell should be left empty in the end [as it is now] and no two prisoners are ever allowed in one cell.



14. A landlord entrusted his intelligent gardener the job of planting 16 trees on his field so as to form maximum number of straight lines each line containing 4 trees. The gardener came up with a brilliant arrangement as shown below with 12 lines. Later on, a mathematician commented that 15 lines could be made. How?



Arithmetic

15.

T E N
T E N
F O R T Y
S I X T Y

The above is an addition sum where each letter may be substituted for a decimal digit thereby making the addition correct.Note, there are 10 different letters and 10 different digits '0 to 9'.

16. In the following [integer] division sum all the digits, except **seven '7's** shown , have been erased [replaced by ▹ or ◃]. Each missing digit may be 1,2,3,4,5,6,7,8,9, or in the case of ▹ even 0. Observe that every step in the working consists of two lines each of which contains an equal number of digits. The problem is to restore the whole working of the sum. The solution is unique.

◃ ▹ ▹ ▹ **7** ▹ **)** ◃ ▹ **7** ▹ ▹ ▹ ▹ ▹ ▹ ▹ ▹ **(** ◃ ▹ **7** ▹ ▹

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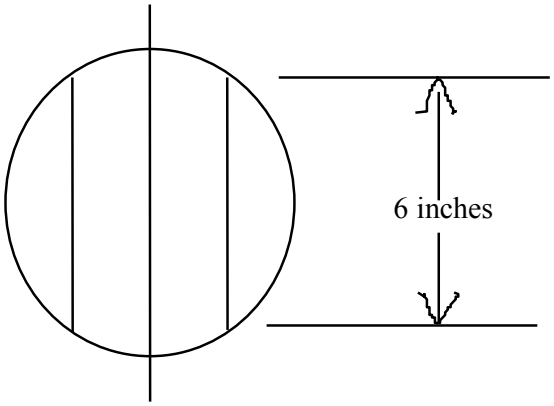
Mathematical

17. A six inches long cylinderical hole has been drilled straight through the center of a solid sphere.What is the volume remaining in the sphere.



Chess-board problems

18. Can you place eight Queens on the Chess-board without any Queen being able to cross/attack any other.

19. Here is an interesting problem for chess lovers.

						R	
							p
					K		**k**
						p	
					b	**P**	**P**
				N			

Black ⇓

Black pieces indicated in lower-case underlined

k = king
b = bishop
p = pawn

White pieces indicated in Upper-case

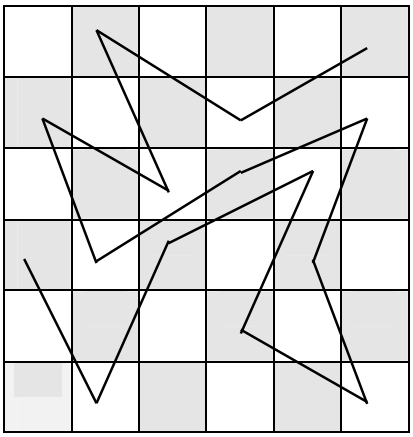
K = King
R = Rook
N = Knight
P = Pawn

⇐

White ⇑

The story goes like this : In the above position White announces mate in three moves.
Suddenly a bullet strikes and the White Knight [**N**] is lost.Unflinched,White announces
mate in four. Again a bullet strikes and removes the pawn at KR2 [shown by ⇐].
Now, White announces mate in five. This was the original problem. After a century or so a German Chess expert pointed out that if the first bullet had removed the Rook instead of Knight White can still mate in six. What are these four solutions.

20. The following is a renowned problem. In the six-square chessboard shown below Knight moves are made as marked starting from the centre of any square and making knight moves and reaching every time the centre of another square. The moves are marked with straight lines and maximum number of such lines are required to be drawn
such that no line touches or crosses another line. [Obviously no square can be visited twice though the lines may pass thru' off-centre] For example such a knight-tour of 14 moves are shown. It was thought for centuries that max. 16 lines can be drawn. Can you find that. When the puzzle was posed to a computer it promptly found a solution of 17 moves. Can you find that too!



Email your Queries and Answers to Wg Cdr A J Thomas Walker

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