

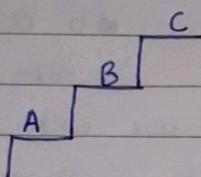
Puzzles.

1. A shop sells 3 chocolates for 1₹ and gives one extra chocolate for exchange for 3 wrappers. How many chocolates can be bought for 10₹.
2. A person 'A' wants to send a secret message to his friend 'B' via a person 'C'. 'A' does not trust 'C'. So 'A' puts his message in a box with a lock, but 'A' should not send the key. How can 'A' send his message securely with 'C'?
3. A room with a door closed and 3 light bulbs inside. Outside are 3 switches, you can manipulate the switches as you want but once you open the door, can't change them. If you can open the door only once, identify each switch with respect to its bulb. Explain how?
4. An airplane flies non-stop from Mumbai to New York City. On the flight a pregnant lady gives birth to a healthy child just 30 minutes before the plane was about to land. Find if the airplane's weight was increased/decreased when it landed in NY as compared to ~~the~~ weight in Mumbai.
5. Four prisoners, all will be freed if atleast one of them correctly guesses the colors of the hat on his head. Only one guess is allowed among all 4 prisoners.
There is a wall in between & all prisoners are facing the wall.

A	B	C	D
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It is known that there are 2 black and 2 white hats. Which prisoner will ~~not~~ make the correct guess?

6. Given the following arrangement, one prisoner among the three has to make a ~~co~~ correct guess for the colour of hat on his head, given that there ~~as~~ are 3 black and 2 white hats.
Which prisoner can make the correct guess & how?



7. 100 prisoners are standing on stairs in a queue facing in one direction. Each prisoner is wearing either a black or red hat. A prisoner can see hats of all prisoner in front of him in the queue but cannot see his own hat's color.

The jailer asks colors of each prisoners hat starting from the last prisoner in the queue. If a prisoner tells the correct color then he is saved, otherwise executed.

How many prisoners can be saved atmost & how?

Note: The above type of problem is solvable only for even numbers of prisoners.

8. 100 prisoners are present in a room. The jailer comes in with a bag of Red and Black hats. He first ~~plots~~ makes every prisoner close their eyes, then puts a hat on each of their head. The count of Red and Black hats is unknown.

Now one by one a prisoner has to walk out of that room, open his eyes and stand in a group formation of Red and Black hats. What strategy should be used to form the group?

9. Find the ages of daughters.

- (i) Product of their ages is 36
- (ii) The sum of their ages is equal to the house number
- (iii) The oldest girl likes strawberry ice cream.

Note: The same puzzle could be asked for product of ages = 72.

10. Given two hourglasses of 4 minutes and 7 minutes, describe the process of measuring 9 minutes if possible.

11. A boy from village is to be punished, but is given a last luck based chance to avoid the punishment. He must pick one pill from the box which consist of one Red and one Blue pill. If he draws a Red pill he will be punished, if he draws a Blue pill, he will be forgiven.

But a middle man replaces both the pills with Red, how can the boy ^{avoid} punishment?

(Pick a pill & drop it / loose it).

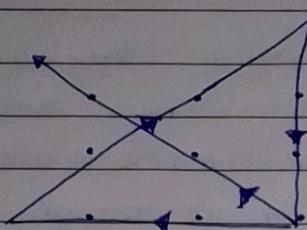
12. 1000 people are standing in a circular arrangement. The first individual has a gun & he kills the person standing next to him, then passes on the gun & so on. Determine who will be the last person standing.

Person 1 kills person 2 & passes on the gun to person 3.

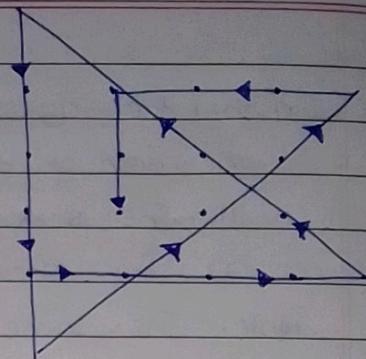
Person 3 kills 4 & passes on the gun to 5

(977).

Q13.



Q14



Q15.

A square shaped magical pond doubles the number of flowers dipped into it. On the four corners of the pond are four temples.

A devotee comes with some flowers dips them in pond, flowers gets doubled. She then offers some flowers in the 1st temple. Again dips the remaining flowers in the pond, flowers double, offers same number of flowers at 2nd temple & so on.

On offering flowers at final temple, no flowers are left. Find minimum number of flowers required at the beginning & the number of flowers offered at each temple.

(Being $2^n - 1$ flowers, offer 2^n flowers).

Q16.

100 coins are lying on the table, 20% of those have tails face up while ~~rest~~ rest 80% have heads face up. Without looking at the coins, we have to divide them into 2 groups such that the number of tails up in both groups should be exactly the same. We can flip any number of coins.

(Flip any 2 coins & put them aside in new group).

(Q17)

100 coins are lying on a table. 10 of them are heads up while 90 of them are tails up. You can't see which one is which.

How can we split the coins into two piles such that there are same number of heads up in each pile?

(Pick any 10 coins for pile 1 & rest 90 for pile 2).

Flip the small pile totally
for same heads

Flip the bigger pile totally
for same tails

(Q18)

3 devils 3 priests. Boat capacity = 2.

Same number of devils & priests = safe

More devils, less priests = ~~if~~ priests die

more priests, less devils = safe.

Help them cross the river.

(Q19) Solve for 5 priests & 5 devils. Boat capacity = 3 (max)

(Q20) Next solve for 4 priests & 4 devils. Boat capacity = 2 (max).

These type of puzzles are solvable for n priests & n devils

for all values of n only if,

$$\text{boat capacity} = \frac{n+1}{2} \text{ for } \& \text{ odd } 'n'.$$

$$= \frac{n+2}{2} \text{ for even } 'n'.$$

Hence Q20 not solvable.

(Q21)

A lady makes a purchase of 200₹ in a store. The shopkeeper sells her goods with zero profit. He receives a 2000₹ note from the lady. The shopkeeper gets change ~~from~~ of 2000₹ from next shop, retains 200₹ for himself & returns the

lady back 1800[₹]. Later the shopkeeper at the next shop comes with 2000[₹] note saying "duplicate" & takes his money back. How much loss did the shopkeeper incur?

Q22. A blind man is alone on a deserted island. He has two blue pills & two red pills. He must take exactly one blue pill & one red pill or he will die. How does he do it?

Q23. A man works on 10th floor and takes the elevator down to ground level at the end of the day. Yet every morning he only takes the elevator to the 7th floor, even when in a hurry. But he goes all the way to 10th floor when others are in the elevator or if it is a rainy day. Why?

Q24. A dealer has 1000 coins and 10 bags. He has to divide the coins over the ten bags so that he can make any number of coins simply by handing over a few bags. How must he divide the money into the bags?
(2^0 to 2^9 & rest in last bag).

Q25. We have 3 glasses & 10 coins. The problem is to place odd number of coins in each glass & total coins in all 3 glasses together must be equal to 10.

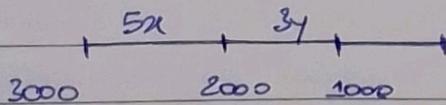
(026.) 9 balls, with 1 heavy ~~one~~ defective. Identify the defective in least comparisons. How many comparisons will be required? (2)

(027.) Solve the previous question if it is not known whether the defective ball is heavier or lighter than the rest. Give minimum number of comparisons required? (3).

(028.) 12 tennis balls, 1 defective (heavier / lighter). Find the defective ball, tell if it is heavier defective or lighter defective in only 3 comparisons.

(029.) 8 identical balls. 1 defective (heavy). Find defective ball in only 2 comparisons.

(030.) 3000 bananas & a camel. Camel can carry 1000 bananas at once (max) & eats one banana per kilometer travelled. The person wants to transport bananas 1000 km away. What are the max number of bananas that can be transferred?



(031.) Two gates: one to Hell & one to Heaven.

Two gatekeepers: one tells Lies one speaks Truth, but don't know which one guards which gate.

We are allowed to ask one question & need to find out the gate to heaven. What is the question?

(Q3). Policeman decides to punish the prisoner and asks him to make a statement. The prisoner should make such a statement so that he would be alive.

If the statement is ~~true~~ held true by policeman, prisoner will be hanged to death & if the statement is held false by policeman, prisoner will be shot dead.