## Each of the campers walks at a different speed. One can cross the bridge in 1 minute, another in 2 minutes, the third in 5 minutes, and the slowest camper takes 10 minutes to cross. How can the campers make it across in exactly 17 minutes?

1, 2, 5, 10

5, 10 ←------------------------------------------> 1, 2

1, 5, 10 ←---------------------------------------> 2 +3

1 ←---------------------------------------------->5, 10, 2 +10

1, 2 ←----------------------------------------------> +2

XX ←------------------------------------------------> 1, 2 +2

==17 minutes

**8 balls 1 lighter**

Divide in 3 groups of 3, 2, 2 and compare 2 and 2 then follow

**Pirates**

Give 1 to each of others to get majority

**100 doors problem**

Gates will get opened when a number has odd number of factors possible only in the case of perfect squares for 1-100 there are 10 perfect sqrs.

so it = sqrt( No. of doors )

**25 horses 5 tracks and find 3**

5 races to get the 5 max in a group, 1 more race to sort those first in the grps...retain the first and race 5 others : 2, 3, 6, 7, 11 and find the top 2 to get top 3 horses

**Boris/Natasha Mailing puzzle:**

**Faulty postal service puzzle : boris has to send ring to natasha but both have their own padlocks and the key . How he can send the same**

Soln : Boris puts the ring in box locks with his padlock keeping the key and tell the same to natasha over the phone then natasha gets the box and again locks the same and sends back. This time boris removes the lock of natasha and return which natasha can open with her key.

**3 daughters puzzle:**

Given the multiplied result of daughter’s ages find their ages given some other clue as well. Find out the combinations. The max repeated combination has high probability. use that too choose 1 among 2

**Balance Puzzle**

No. of weights require to weigh 1-40. get the 3 squared powers 1, 3, 9, 27

**Black and White Hat**

W || X Y Z if both Y and Z have diff. colors then X will be silent and Y will deduce his hat to get himself and all other prisoners free.

**2 eggs 100 floors**

x + (x-1) + (x-2) + (x-3) + ... + 1

(x+1)/2 = 100

14

**Reverse the words in string**

I am good

good am I

Solution : Reverse the whole string and then reverse each word

0

**Dave winer is stuck on a deserted island, with lots of trees, which is very thin and ten miles long (east to west). large cliffs surround the entire island and if he jumped off, he wouldn’t survive the fall. a fire starts burning at the west side of the island. unfortunately this island always has a west to east blowing wind blowing at 2 mph and this moves the fire slowly toward dave at 1mph. (so he only has ten hours left)**

Dave pick a branch from east side light it up from west side and burns the tree 1 mile from east direction that will leave 1 mile vegetation consumed so he can change the direction now

FFFTTTTTTTTTD

FFFFTTTTDFFFF

FFFFFFFTD\_\_\_\_

**62 board puzzle**

all will be filled in white-black fashion except the 2 black that are on either side of chess board

**A one armed surgeon with a hand wound needs to operate on three patients. the surgeon only has two gloves.**

Reverse the glove after operating on 2 patients

**There are three ants on a triangle, one at each corner. at a given moment in time, they all set off for a different corner at random. what is the probability that they don’t collide?**

Total movements 2^3 = 8, no collision only when anti or clockwise = 2/8 = .25

**Paint a cube**   
6!/(6\*4) = 30, where we can select 1 color pointing northwards then the south one is fixed we can choose 4 colors for sideways, giving total combination of 24 colors

### Boys and Girls

In a country in which people only want boys, every family continues to have children until they have a boy. if they have a girl, they have another child. if they have a boy, they stop. what is the proportion of boys to girls in the country?

It will be 1:1

N = N/2 boys + N/2 girls of which N/2 ones again try to get boys then they get girl again

so it will be 1:1

**0s in 100!**

10 + 10 + 1 + 3 = 24

**3 doors and heaven**

X = 1/3 \* 0 + 1/3 \* (1 + X) + 1/3 \* (2 + X)

= 0 + 1/3 + X/3 + 2/3 + X/3

= 1 + 2X/3

//integer palindrome

n = num;  
 rev = 0;  
 while (num > 0)  
 {No  
 dig = num % 10;  
 rev = rev \* 10 + dig;  
 num = num / 10;  
 }

//integer to binary

int i = 32, n;

while(i>=0)

if((i&n) == 0)

print “0”;

else

print “1”;

i = i>>1;

Car Crossing :

Probability of Car crossing a junction in 20 mins is 609/625. what is it 5 mins

now here take the contradiction… car not visible in 5 mins so we get

1-(1-609/625)^¼ = ⅗

**cube puzzle :**

Number of different cubes with color painted;

Actual comb : 6!

now to find the number of cubes with same alignment take one side of the

you have 6 options now you can rotate the cube around this side so you have 4 options for the same.

Ans is 6!/6\*4 = 30

Two calendar cubes which digits to put so that you can show all months and date

0, 1, 2, 3, 4, 5 && 0, 1, 2, 6, 7, 8

you can get 9 by inverting 6

When I had two coins H and T.. if I say that I have 1 H whats the probability of getting H

that is 33% ignore TT we have HH, HT, TH

Three coworkers would like to know their average salary. how can they do it, without disclosing their own salaries?

Every person will add a random number and add his own salary and pass it own. AS+AR, BS+BR and CS+CR in similar way when C receives it he subtracts his random then A subtracts his random and then B. atlast C has sum of all .. he divide it by 3 and get the average.

Gold bar puzzle

You have a guy employing whom you have to get some work done. You have a gold bar that can be cut into 7 pieces. How many cuts you have to make to the bar such that you have to give 1/7th of [gold@EOD](mailto:gold@EOD)

Solution : just 2 cuts required

\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

just 2 cuts : | \_\_\_| |\_\_\_|\_\_\_| |\_\_\_\_|\_\_\_\_|\_\_\_|\_\_\_|

Day1 – give 1

Day2 - take back 1, give 2

Day3 – give1

Day4 - take back 1 and 2 give 4

Day5 – give1

Day6 – take back 1 give2

Day7 – give 1

You have two types of pills, A & B. You need to take one of each pill in the morning, and you can't take extras because it will make you sick. One morning you open the A pills up and drop one in your hand. Then you open up the B pills and by mistake drop two in your hand. The problem is the pills look exactly the same and they got mixed up in your hand. The question is, how do you make sure that you take one A pill and one B pill without wasting any pills?

Take (1) Pill A from the bottle and add it to the 3 unknown pills. You now have (2) Pill A and (2) Pill B in your pile.

- Take each of the 4 pills and cut them in half.

- For each pill, put one of the halves in a pile on the right and one of the halves in a pile on the left.

- Each pile now contains 2 halves of Pill A and 2 halves of Pill B, which is the same as (1) Pill A and (1) Pill B in each pile.

Josephus Problem:

Consider this Eg : n=5 and k=2.

Start from the 1st person (Let a=1). You need to kill Kth person from 'a'. Since 'a' himself is the 1st person you need to kill a+(k-1)th person. ( see line 14 of my iterative code)

Now the next starting position is the person next to this dead fellow. ie. next starting position is (a+k-1) + 1.

But if dead fellow is 5, the next starting pos is 6, which is out of range for n=5. So we take (a+k-1) % (no. of remaining/alive people) + 1.

Hence for the iterative method a=(a+k-1)%i+1 , where 'i' represents the no. of alive people .

So basically, a+k-1 => says who will be killed.

(a+k-1)%i+1 => who will be the next person to start from.

In the final iteration that next person is obviously the winner :)

This can recurse as return (f(n,k-1)+k-1)%n+1 where f(1,k) = 1.

And (f(n,k-1)+k)%n works if f(1,k) = 0.

int josephusIteration(int n,int k) {

int a=1;

for(int i=1;i<=n;i++) {

a=(a+k-1)%i+1;

}

return a;

}