1. The heavy pill.
   We will take different number of pills from each bottle. Like 1 from bottle 1, 2 from bottle 2 and so on. Find out the weight of this combination. Comparing with the expected weight, we will find out how many extra 0.1s are there, say that number is n, that would be the bottle from which we took n pills from

2. P(winning game1) = p
   P(winning game 2) = [p*p*(1-p)] * 3
   = 3p^2 – 2p^3

   We should play G1 if P(G1) > P(G2)
   P > 3p^2 – 2p^2
   ⇨ P < 0.5
   ⇨ We should play game 1 if p <0.5 else we should play game 2
3. Dominos.

   No it is not possible to cover the entire board since at the first row, there will be seven blocks which we will be able to cover 6 of them, on remaining will have half a domino going into next row. You can visually see, covering them completely is not possible.

4. P(clockwise) = (1/2)^3
   P(counter) = (1/2)^3
   P(same direction) = (1/2)^3 + (1/2)^3
   P(collision) = 1-1/4 = 3/4
5. Jugs

Step	Water in 5l jug	Water in 3l Jug
Fill 5	5L	0L
Pour from jug5 to jug3	2L	3L
Throw water from jug3	2L	0L
Pour from jug5 to jug3	0L	2L
Fill jug5	5L	2L
Try to fill jug3 from jug5	**4L**	3L

6. The number of days needed will be as many as blue eyed people
   If there is one blue eyed person, he would not see anyone else with blue eyes and conclude he has blue eyes and leave in day 1
   If there are two blue eyed people, each would se only one blue eyed person who did not leave on day 1 since they saw a person with blue eyes who did not leave. They will then conclude they didn't leave because of they had blue eyes too. Thus, if there are two people they will leave on day 2
   Same pattern can extend to many people with blue eyes
7. <TODO>
8. In each drop we will try to reduce the number of steps potentially required by next drop.
   So if Egg1 dropped from floor n, then Egg 2 is potentially required to take n-1 steps.

So egg1 should start at floor x and then go up by x-2, x-3 and so on until we reach 100
X + x-1 + x-2 + … + 1 = 1==100
X = 13.65
We round up x to 14 which means we will check 14, 14+13, 14+13+12 and so on

9. All the doors that have odd number of factors, will be left open. Only perfect squares have odd number of factors. So from 1 to 100, there are 10 perfect squares which means 10 doors would be open at the end of the process
10. We can use the strips as binary indicator. This way 10 strips will be able to handle 1024 bottles. If there is 1 at a specific binary digit, we put the poison drop on strip matching that bit. After seven days, we see which bits are poisoned and find the required poison bottle number