# Answer sheet Probabilistic lab (lab 3)

Instructions: Fill out your answers below. Make a PDF of the complete file, and upload that **PDF** on Blackboard.

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## **Blackboard question 1**

1A: Calculate the posterior value that people can see in the future under the data. Assume:

* The prior probability that people can see in the future is equal to not seeing in the future: 50% (H)
* The probability to observe this data under the hypothesis that people can see in the future is 0.531 (D | H)
* The probability to observe this data under the hypothesis that people cannot see in the future is 0.52 (this captures the intuition that values around 0.5 are likely when fully guessing) (D | !H)

The posterior value = 0.51

1B: So, I don’t know what input to use but you need BayesFactor method.

1C:

1D: (you need to calculate 3 values here)  
i:

ii:

Iii:

1E.

**Blackboard question 2**  
Make sure to round all answers to 5 decimals

2A:

2B:

2C:

## **Blackboard question 3**

3A:

i. For the RF Model:

ii. For the BS Model:

3B:

## **Blackboard question 4:**

4A:

4B: Copy screenshot / picture here

4C:

4D:

### Bonus question:

If you complete a bonus question (optional), please answer the questions of the assignment below.

Bonus subquestion 1:

|  |  |  |  |
| --- | --- | --- | --- |
| Model class | Free parameters | Total nr parameters | BIC |
| RF | a,b,c x 2 | 6 |  |
| RF | a,b,c,d x 2 | 8 |  |
| BS | a,b,c x 2 + 1 BS | 7 |  |
| BS | a,b,c x 2 + beta + N | 8 |  |
| BS | a,b,c,d x 2 + 1 BS | 9 |  |
| BS | a,b,c,d x 2 + beta + N | 10 |  |

Bonus subquestion 2: