

1a)

i) Proof is right. I wish you could present it more specific.

ii) Some part of your proof is wrong. When apply your t to the equation, the result is not as shown in your report. The solution is not presented clearly.

1b)

Correct and clearly

1c)

Correct and clearly

2a)

Correct and clearly

2b)

Correct and clearly

2c)

Seems to be right, but your answer need to be more clearly.

3a)

Correct. Without information about the x , we cannot determine the probability distribution of

y . The answer is clearly

3b)

Your answer is uncomplete. We can describe $p(y|x)$ since x is given, and $h(x)$ is deterministic function. You should mention that y has such a distribution on a given x . What your answer means is seems to be just $p(y)$ not $p(y|x)$.

3c)

For $p(y)$, you are correct. But your answer is uncomplete, you didn't motivate anything clearly about $p(y|x)$.

3d)

Correct and clearly.

3e)

Correct. I think you can add some analytical result to your solution. To see whether the analytical result matches the histogram. Make your answer more clearly.

4a)

Not complete. You did not give the answer for which distribution does it look like.

4b)

Correct, but your answer should be more clearly.

4c)

Correct and clearly

4d)

Correct, but the result should be more simplify.

4e)

Correct, but the result should be more simplified.

4f)

Not correct, you should give an expression for the MAP estimator.

4g)

Part correct. MMSE estimator is not necessarily a continuous function. It works by minimizing the mean squared error between the estimated value and the true value of the parameter. The MAP estimator aims to maximize the posterior probability of the θ given the observation y . If you get an expression for the MAP estimator in f), your answer will be more clearly.