## **True and Predicted Distribution**

What are true and predicted distributions

1. Consider the above example

|  |  |  |
| --- | --- | --- |
| **G** | **P(G=g)**  **(y)** | **(ŷ)** |
| A | 0.1 | 0.2 |
| B | 0.2 | 0.3 |
| C | 0.7 | 0.5 |

1. Here, y refers to the true distribution, or the actual probabilities for each value of G
2. And ŷ is the predicted distribution, or what we estimate the probabilities to be based on our observations
3. To measure the degree of correctness of our predictions, we can use a loss function.
4. However, Squared-error function might not be appropriate as it doesn’t factor in some of the basic assumption of probability theory, ie P(G) >= 0 and <= 0, etc
5. So, we must select a different loss function that is more rooted in probability theory (Cross Entropy)