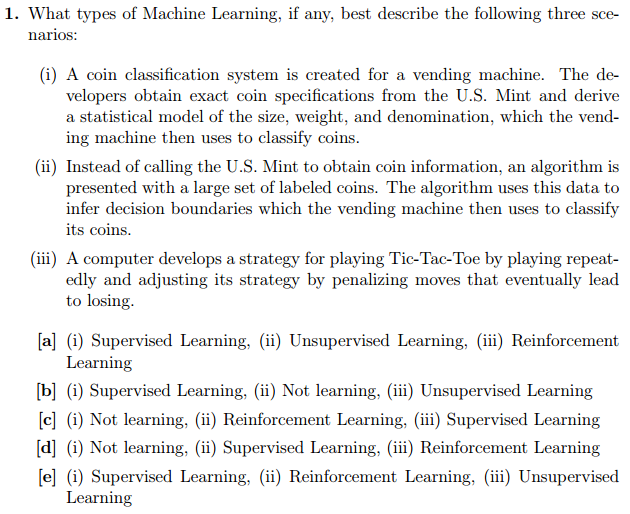
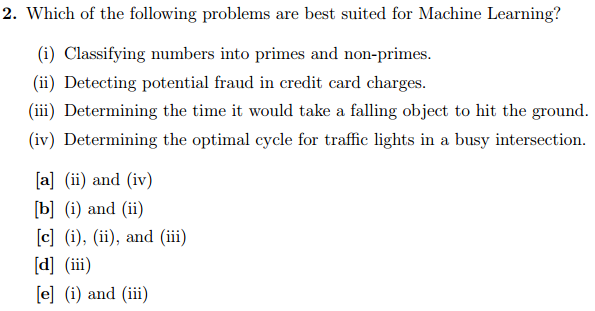
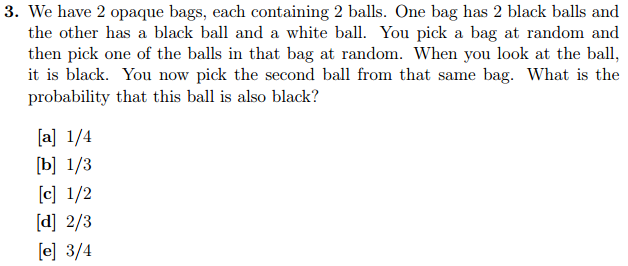
The Learning Problem HW1



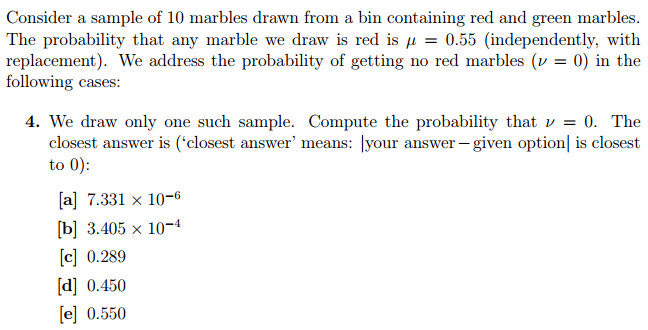




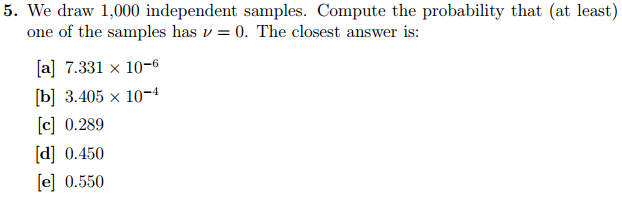
is the bin with 2 black balls. is the bin with a black and a white ball. Is the probability of drawing a black ball from picking a bag at random then picking a ball at random. is the probability of drawing a blackball at random from a bag chosen at random given that that bag already has had a black ball removed from it.

(total probability law)

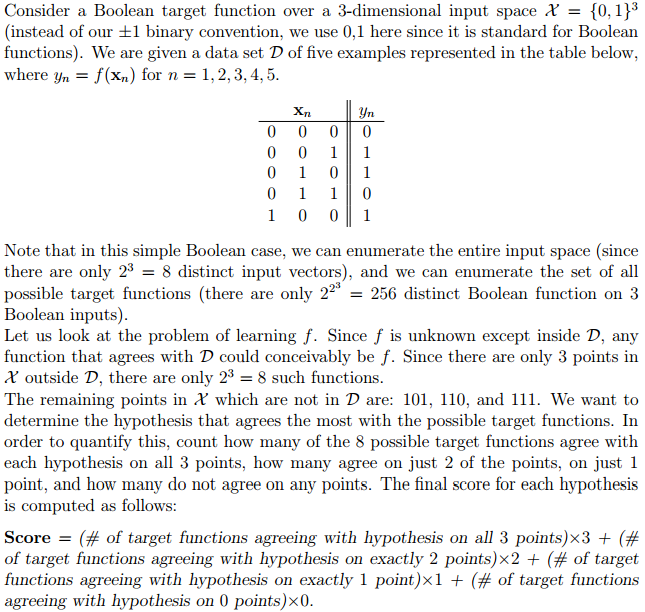
Correction:

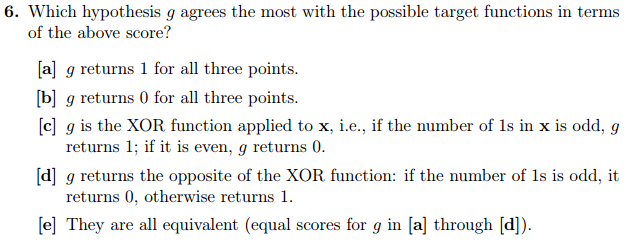


is the randomly drawn sample from the bin. is a red marble.



indexes all thousand independent samples independently and randomly drawn from the bin. The problem of having at least 1 of the 1000 samples be all can be approximated with a binomial distribution. is the number of successes (all of a sample is ), is the number of trials (1000), is the probability (all of a sample is .

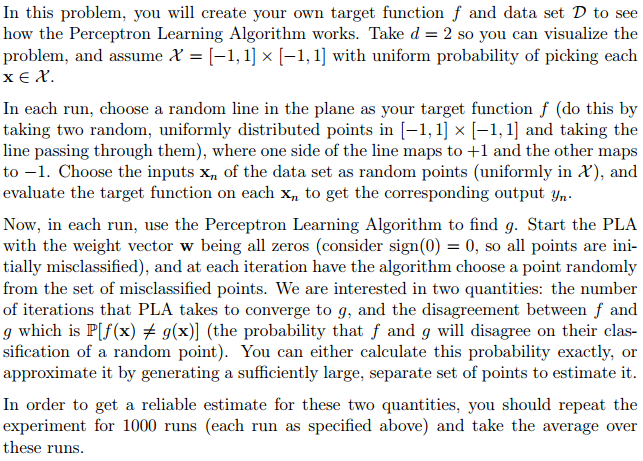


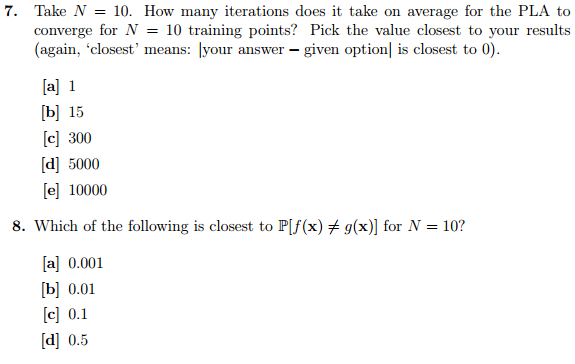


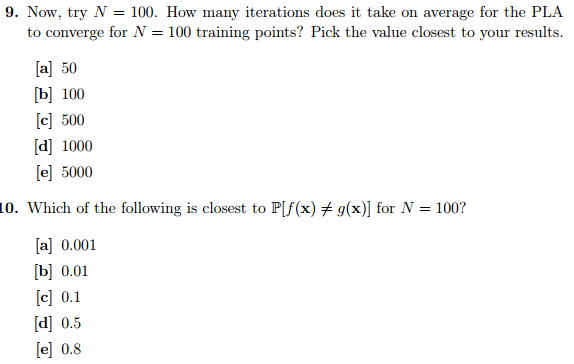
Each possible target function is denoted as

|  |  |  |  |
| --- | --- | --- | --- |
| Hypothesis | 101 | 110 | 111 |
|  | 0 | 0 | 0 |
|  | 0 | 0 | 1 |
|  | 0 | 1 | 0 |
|  | 1 | 0 | 0 |
|  | 1 | 1 | 0 |
|  | 0 | 1 | 1 |
|  | 1 | 0 | 1 |
|  | 1 | 1 | 1 |

|  |  |
| --- | --- |
| Hypothesis | Score |
|  |  |
|  |  |
|  |  |
|  |  |







Refer to PLA Implementation on github.com/cmishra/PLA-Implementation for how I found the above (10 and 8 were calculated approximately).

Grade:

Incorrect answers:

* #3 (I accidentally found instead and put that value as the answer. Found the complement and that is now the answer.

