1. (d)
2. (a)
3. (d) Let A be the event of picking the bin with two black balls and let B be the event of picking a black ball. Then by Baye's theorem, the likelihood of having picked A given B is
$$P(A|B) = \frac{P(B|A)P(A)}{P(B)} = \frac{1/2}{3/4} = \frac{2}{3}.$$
4. (b) Calculate
$$(1-\mu)^{10} \approx 3.405 \times 10^{-4}$$
5. (c)
$$1 - [1 - (1-\mu)^{10}]^{1000} \approx 0.289$$
6. (e) This simply follows from symmetry and the fact that we cannot learn anything when the probability of choosing any hypothesis is equal by any measure.
7. (b) See python code
8. (c)
9. (b)
10. (b)