

PROBLEMS 1 AND 3 output: code is on my GitHub: [prki8570/ai3202/Assignment7](https://github.com/prki8570/ai3202/Assignment7)

```
Assignment7 -- bash -- 80x24
reshut1-37-139-dhcp:Assignment7 Prad$ python Kikkeri_Assignment7.py

Problem 1 is prior sampling, Problem 3 is rejection sampling. Problems 2 and 4
are answered in the writeup.

1a) P(c = true) = 0.48
1b) P(c = true | rain = true) = 0.75
1c) P(s = true | w = true) = 0.454545454545
1d) P(s = true | c = true, w = true) = 0.166666666667
3a) P(c = true) = 0.49
3b) P(c = true | rain = true) = 0.703703703704
3c) P(s = true | w = true) = 0.5
3d) P(s = true | c = true, w = true) = 0.0625
reshut1-37-139-dhcp:Assignment7 Prad$
```

Problem 2:

Actual prior sampling calculation values and errors

$P(C) = 0.50$, error of 0.02, very close

$P(C | R) = 0.80$, error of 0.05, also close but not as much

$P(S | W) = 0.4737$, error of 0.0192

$P(S | C, W) = 0.0474$, error of 0.1196, the highest deviation

Problem 4:

Rejection sampling errors

$P(C)$ rejection sampling error is 0.01, closest one yet!

$P(C | R)$ rejection sampling error is .0963, the second highest error in this assignment

$P(S | W)$ rejection sampling error is .0263, very close

$P(S | C, W)$ rejection sampling error is .0151, third closest one in this assignment.

Sampling was very close to the actual values of $P(C)$ and $P(S | W)$ in each method. The other calculations were not as exact.