```
problem_1a()
MLE of pi: 0.87

problem_1b(30, 26, 0.7)
Wald z: 2.41689 | Wald p: 0.01565 | Reject: Yes
Score z: 1.99205 | Score p: 0.04637 | Reject: Yes
Exact p: 0.03015 | Exact 2*p: 0.06031 | Reject: No
Likelihood ratio: 4.61841 | Likelihood p: 0.03163 | Reject: Yes

problem_1c(30, 26, 0.7)
Wald CI: [0.74502 0.98831]
Score CI: [0.70268 1.03065]
Likelihood CI: [0.66 0.97]

problem_2a()
             Actual
           +        -
Predicted + 224     100
          - 126     150
sensitivity = true positive rate = TP / (TP + FN)
224 / (224 + 126) = 0.64

problem_2b()
Wald CI: [0.58971 0.69029]
Score CI: [0.58971 0.69029]
Likelihood CI: [0.57 0.71]

problem_2c()
I personally do not feel very confident with a health test with this level of
false-negatives.

problem_3()
Wald z: -1.55265 | Wald p: 0.12051 | Reject: No
Score z: -1.40859 | Score p: 0.15896 | Reject: No
Exact p: 0.94999 | Exact 2*p: 1.89997 | Reject: No
Likelihood ratio: 1.83472 | Likelihood p: 0.17557 | Reject: No
4 out of 4 tests fail to reject null hypothesis, therefore I cannot disagree
with the claim.
```