02_Exercise3_MaxL

April 22, 2018

GIVEN: Samples $0, 1, 0, 0, 1, 0$ from a binomial distribution which has the form: P(x=0)=(1-μ), P(x=1)=μ

REQUESTED: What is the maximum likelihood estimate of μ Hint: you can use SymPy to compute the derivities symbolicly

```
In [5]: import sympy as sp
```

In the given samples:
Number of ones : 2
Number of zeros : 4

```
In [6]: p=sp.symbols('p')
        y=sp.Function('y')(p)
        y=(2*p**2)*(4*(1-p)**4)
        q=sp.diff(y,p,1)
        sp.solve(q,p)

Out[6]: [0, 1/3, 1]
```

Hence the maximum likelihood estimate of μ is $1/3$