

MTH450, Fall 2018, Homework 3, Due Thursday, Oct 11th, 9:30am

Guidelines:

- Write brief, to-the-point answers.

1. Section 7.2: 23, 26
2. Section 7.3: 34, 37
3. Suppose that for a parameter $0 \leq \theta \leq 1$, X is the outcome of the roll of a four-sided tetrahedral die

x	0	1	2	3
p(x)	$\frac{2\theta}{3}$	$\frac{\theta}{3}$	$\frac{2(1-\theta)}{3}$	$\frac{(1-\theta)}{3}$

Suppose the die is rolled 10 times with outcomes

3, 0, 2, 1, 3, 2, 1, 0, 2, 1

- (a) Use the method of moments to obtain an estimator of θ .
- (b) Use the method of maximum likelihood to obtain an estimator of θ .