

Quiz 14

ECEn 370

Name: _____ KEY _____

1. Is the following estimator for the mean unbiased? Prove your claim.

$$\hat{\mu} = \frac{2}{n^2 + n} \sum_{i=1}^n i x_i$$

$$E \left[\frac{2}{n^2 + n} \sum_{i=1}^n i x_i \right] = \frac{2}{n^2 + n} \sum_{i=1}^n i \mu = \mu \frac{2}{n^2 + n} \frac{n(n+1)}{2} = \mu$$

Yes.