Extra Credit #4

Due: March 14, 2023   **Points:** 30

1. (*30 points*) Section 18.3.2.3 derives a formula for $I(A;X)$. Prove that this formula is a maximum with respect to p when $p = \frac{M^{\frac{1}{m}}}{1+mM^{\frac{1}{m}}}$ (this is different than what is in the text).