

Math 308 Assignment 10
Mean and Variance of the Chi-Squared Distribution

Nakul Joshi

March 6, 2014

1 Moment Generating Function

From the definition of the m.g.f.,

$$\begin{aligned} M_Z(t) &= \mathbb{E}(e^{tX}) \\ &= \int_0^\infty e^{tx} \frac{1}{2^{k/2} \Gamma(k/2)} dx \end{aligned}$$