Stat 479
Fall 2009
Quiz 1
September 3, 2009

1. You are given that $\mathrm{F}_{\mathrm{x}}(\mathrm{x})=1-(100 / \mathrm{x})^{4}$ for $\mathrm{x} \geq 100$.

You are also given that $\mathrm{f}_{\mathrm{y}}(\mathrm{y})$ is:

| $\mathbf{y}$ | $\mathbf{f}_{\mathbf{y}}(\mathbf{y})$ |
| :---: | :---: |
| 100 | 0.4 |
| 200 | 0.3 |
| 300 | 0.2 |
| 400 | 0.1 |

Calculate $\operatorname{Var}(\mathrm{Y})-\operatorname{Var}(\mathrm{X})$.
2. Automobile losses are distributed as a Gamma distribution with parameters $\alpha$ and $\theta$. The expected loss is 800 and the variance of the loss is 160,000 .

Determine the mode.

