Stat 479
Fall 2009
Quiz 2

## September 10, 2009

1. Losses from a policy covering emergency room visits are distributed as a Pareto distribution with $\alpha=3$ and $\theta=1000$.

The insurance company wants to impose a deductible such that the expected cost per emergency room visit under the policy is reduced to $50 \%$. In other words:

$$
\mathrm{E}\left[(\mathrm{X}-\mathrm{d})_{+}\right]=0.5 \mathrm{E}[\mathrm{X}]
$$

Determine d.
2. The random variable $X$ is uniformly distributed between 20 and $z$.
$\operatorname{TVaR}_{80}(\mathrm{X})=155$.
Determine k so that the standard deviation principle is also equal to 155 .

