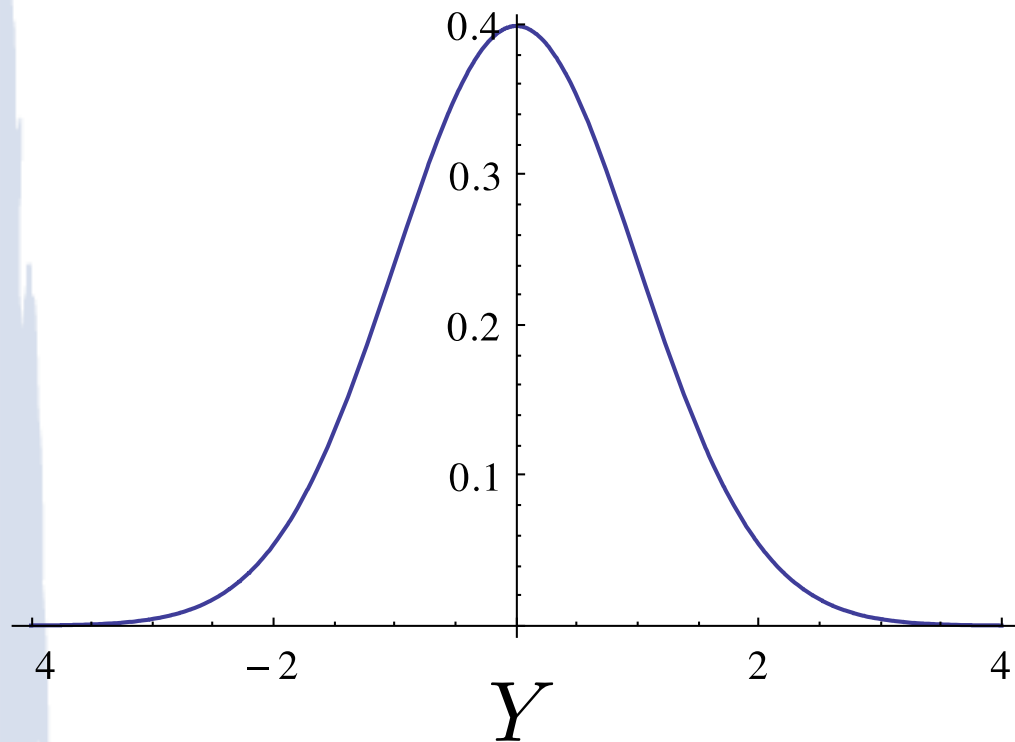


Location of Maximum Density Depends on Parametrisation

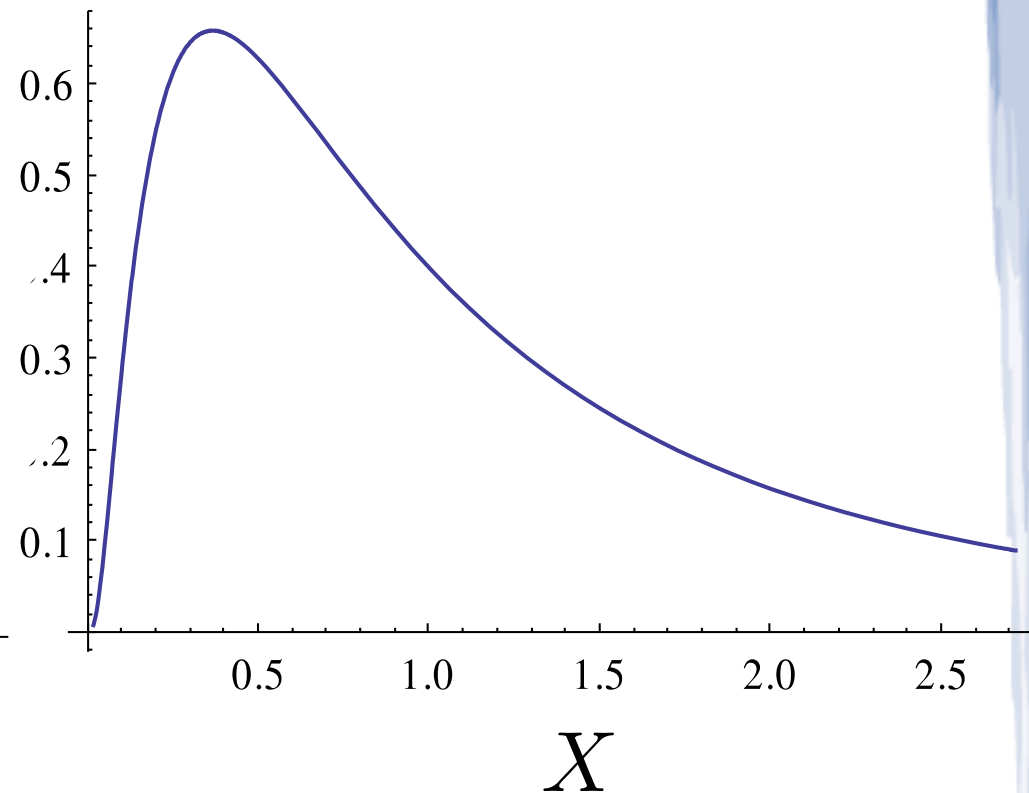
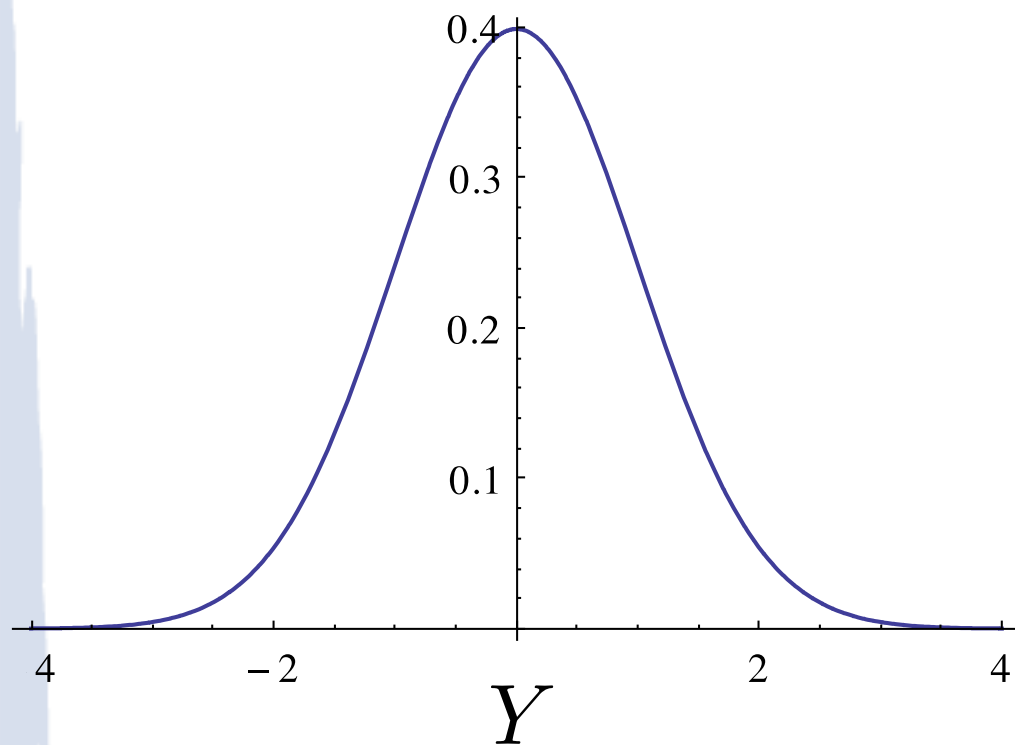


$$Y = \ln(X)$$

$$Y = 0 \leftrightarrow X = 1$$

Y has standard normal distribution

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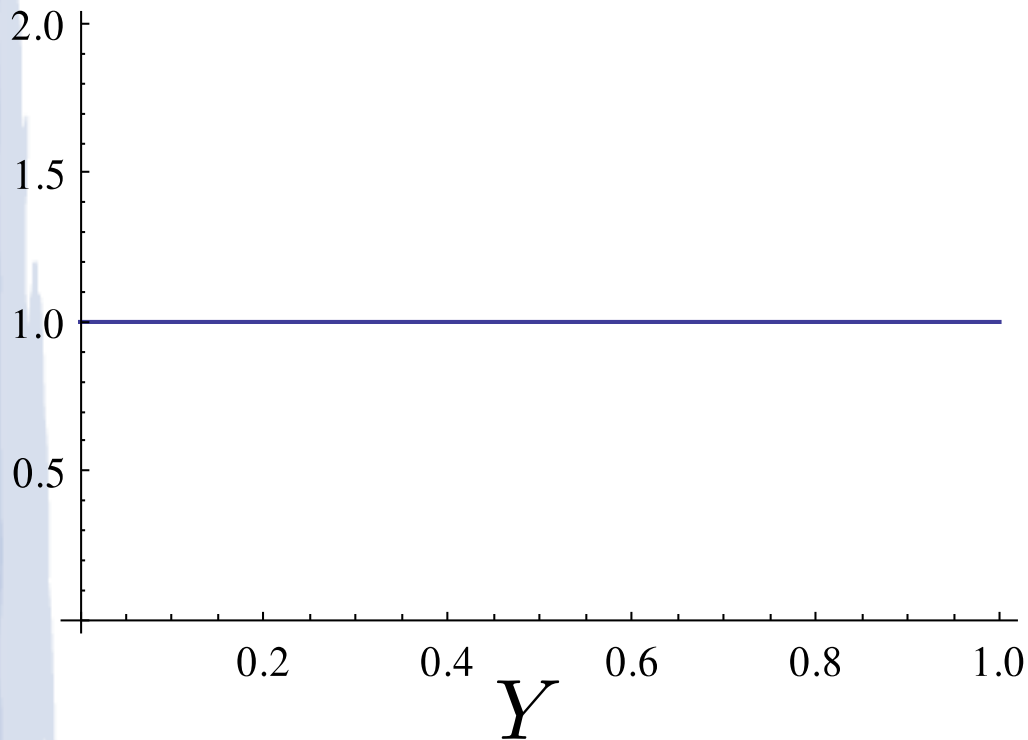


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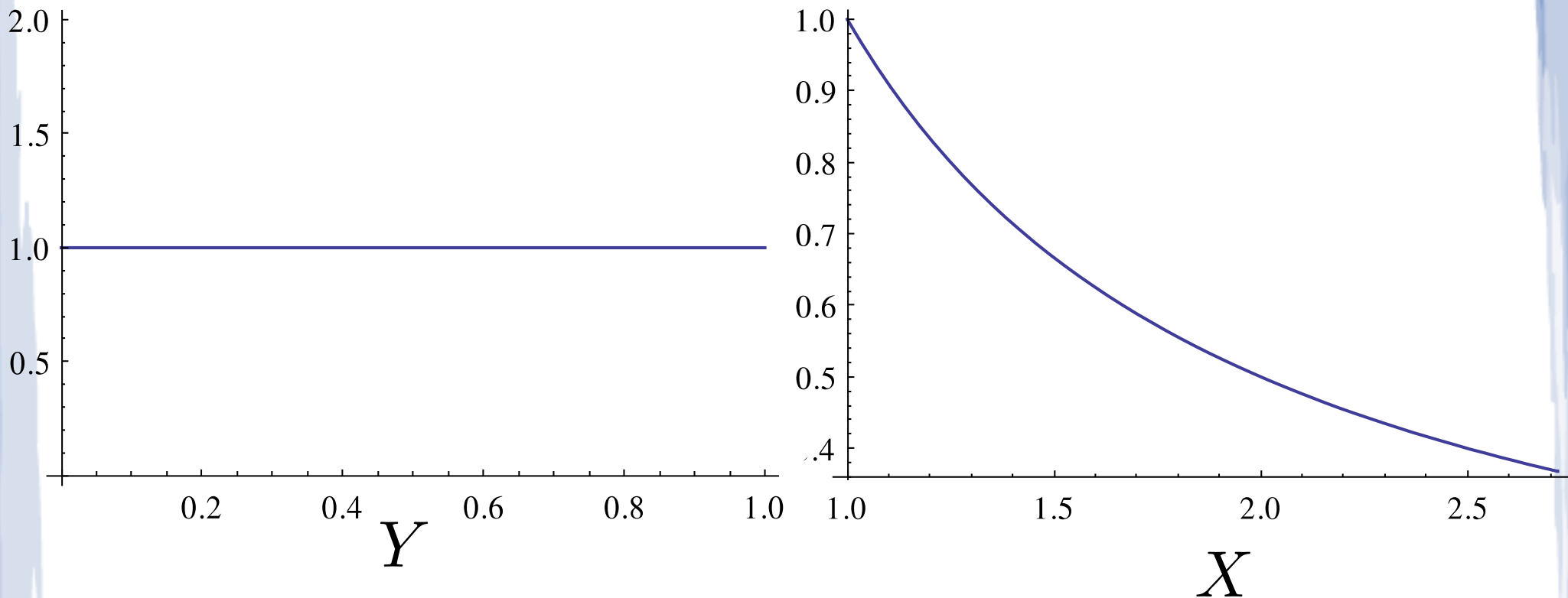
Uniform Density in One Parametrisation is not Uniform in Another



$$Y = \ln(X)$$

Y has uniform density on $[0,1]$

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Objective Decisions?

- Statistical learning software used to predict risk scores for re-offending of criminals in Broward County, Florida
- Designed to make these predictions more objective!
- Based on 7000 people arrested
- Predicts correctly 61% (50% would be chance level)
 - Q. Would judges do better?
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- But different types of errors for white vs African American:

	WHITE	AFRICAN AMERICAN
Labeled higher risk, but did not re-offend	23.5%	44.9%
Labeled lower risk, but did re-offend	47.7%	28.0%

Source: www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing