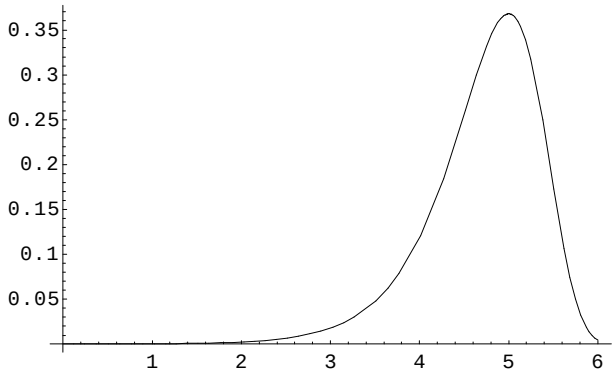
This notebook plots the likelihood function, and finds the max lik estimate for the one observation Extreme value estimation problem in min % max . pdf

```
h = Exp[2 b - 10] Exp[-Exp[2 b - 10]]
```

$$E^{-10+2b-E^{-10+2b}}$$

```
Plot[h, {b, 0, 6}]
```



Graphics

```
Derh = D[h, b]
```

$$E^{-10+2b-E^{-10+2b}} (2 - 2 E^{-10+2b})$$

```
Solve[Derh == 0. b]
```

Solve::tdep : The equations appear to involve transcendental functions of the variables in an essentially non-algebraic way.

$$\text{Solve}\left[E^{-10+2b-E^{-10+2b}} (2 - 2 E^{-10+2b}) == 0.\, b\right]$$

```
FindMinimum[-h, {b, 5}]
```

FindMinimum::fmgz : Encountered a vanishing gradient. The result returned may not be a minimum; it may be a maximum or a saddle point.

$$\{-0.367879,\ \{b \to 5.\}\}$$