

# Untitled

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## Introduction

Today's tutorial will:

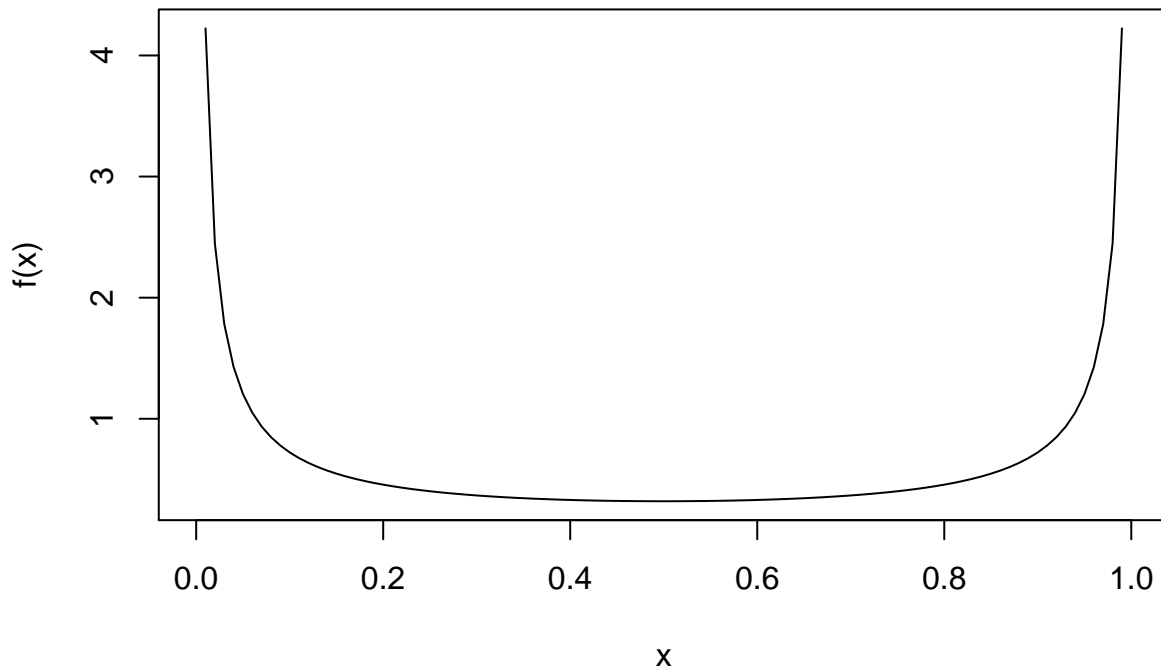
- Discuss any possible questions you have met in lecture notes, R codes and so on.
- Discuss the suggested problems.
- Show how to use the “nlm” (nonlinear linear minimization) to find the mle.
- Revisit the Gamma estimators if possible (actually we use the continuity of the function to prove the consistency)

### 8.10.7

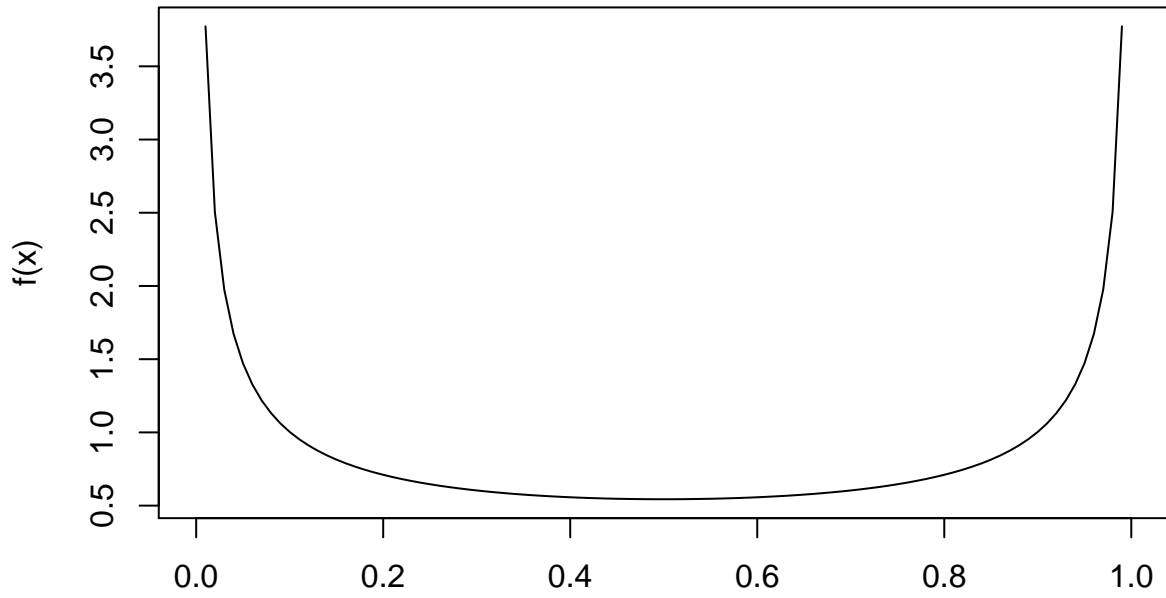
```
f <- function(x){  
  gamma(2*alpha)/(gamma(alpha)^2) * (x*(1-x))^(alpha-1)  
}
```

```
for (alpha in seq(0.2,2,0.2)){  
  curve(f, 0, 1, main=paste("alpha = ", alpha))  
}
```

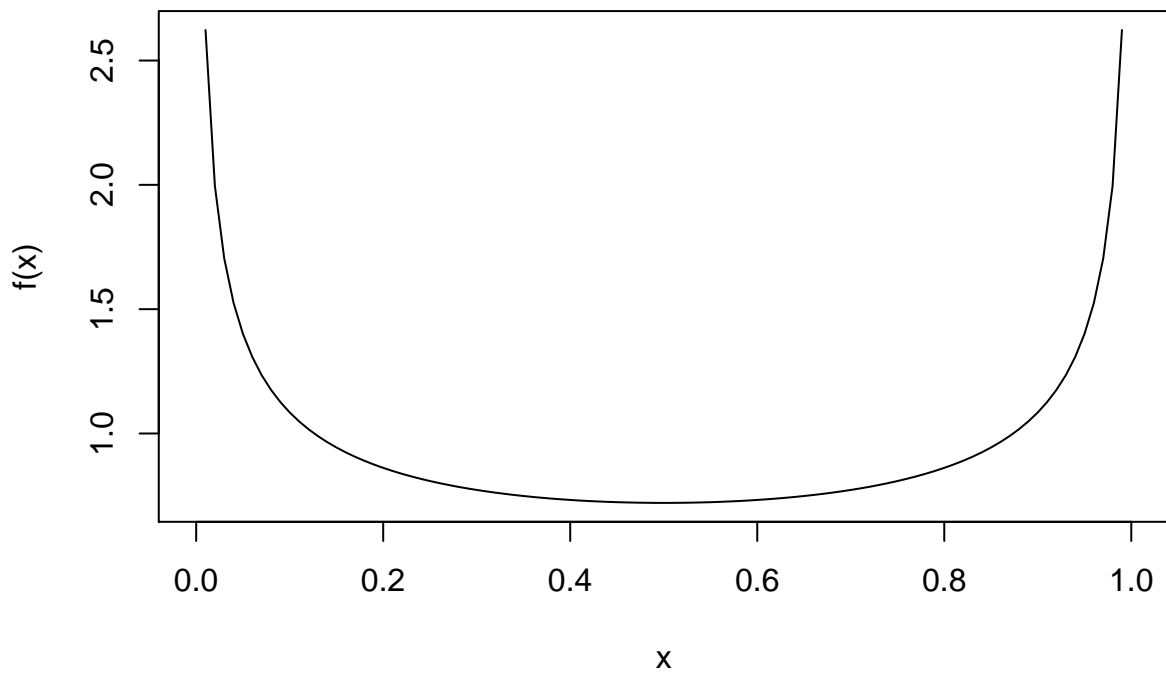
**alpha = 0.2**



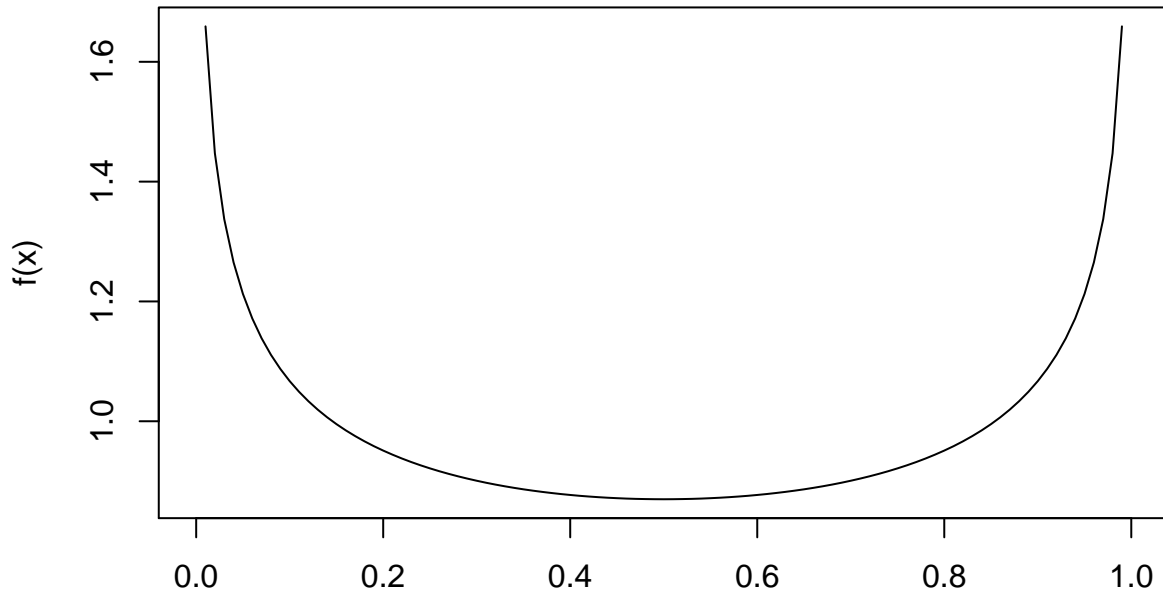
**alpha = 0.4**



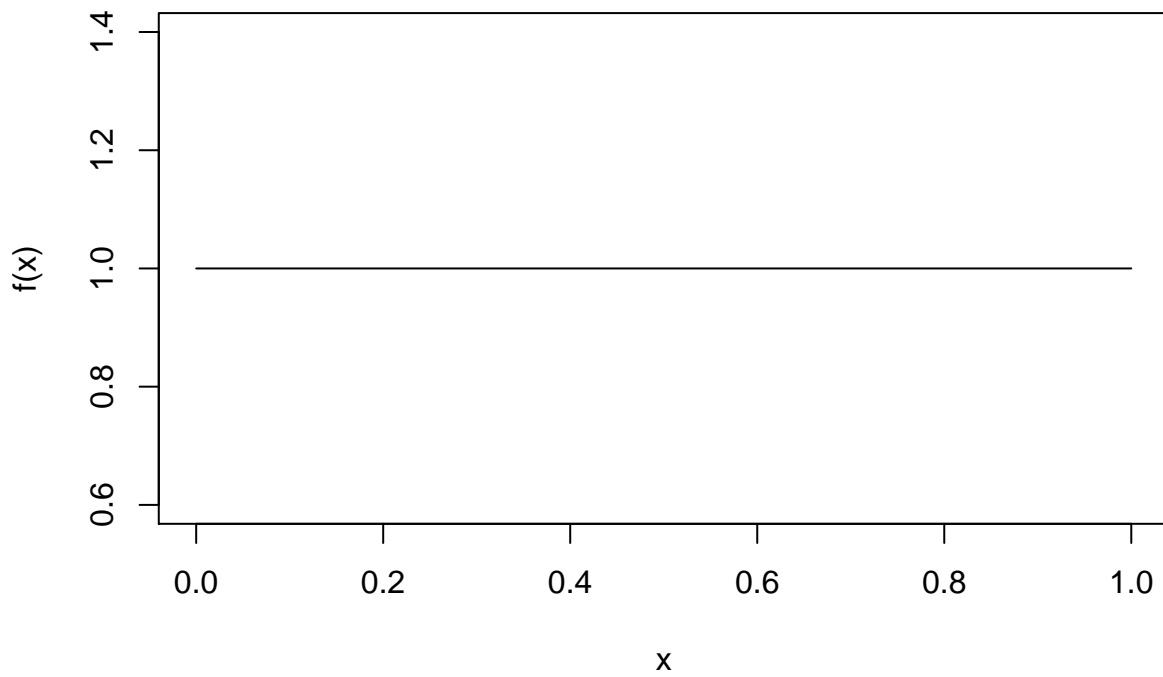
**alpha<sup>x</sup> = 0.6**



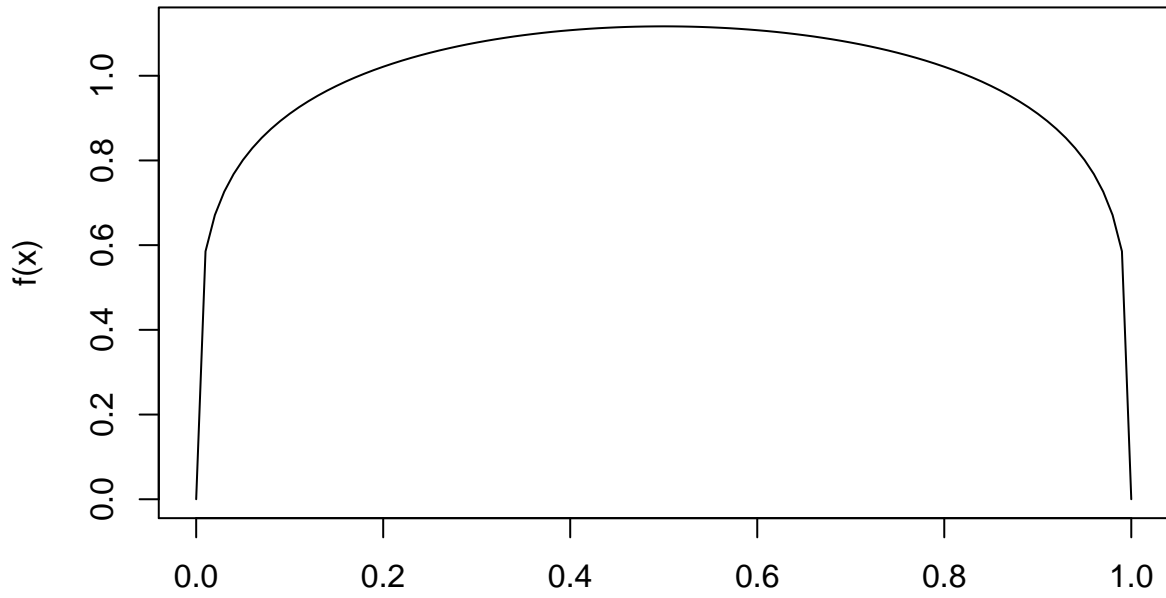
**alpha = 0.8**



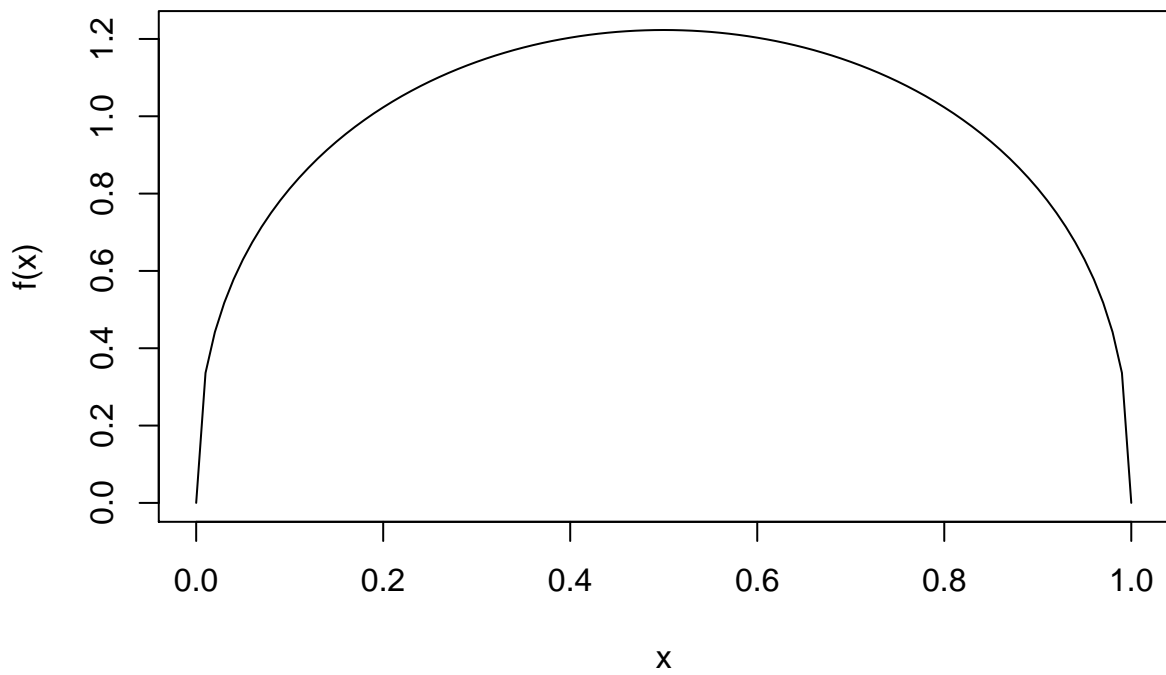
**alpha = 1**



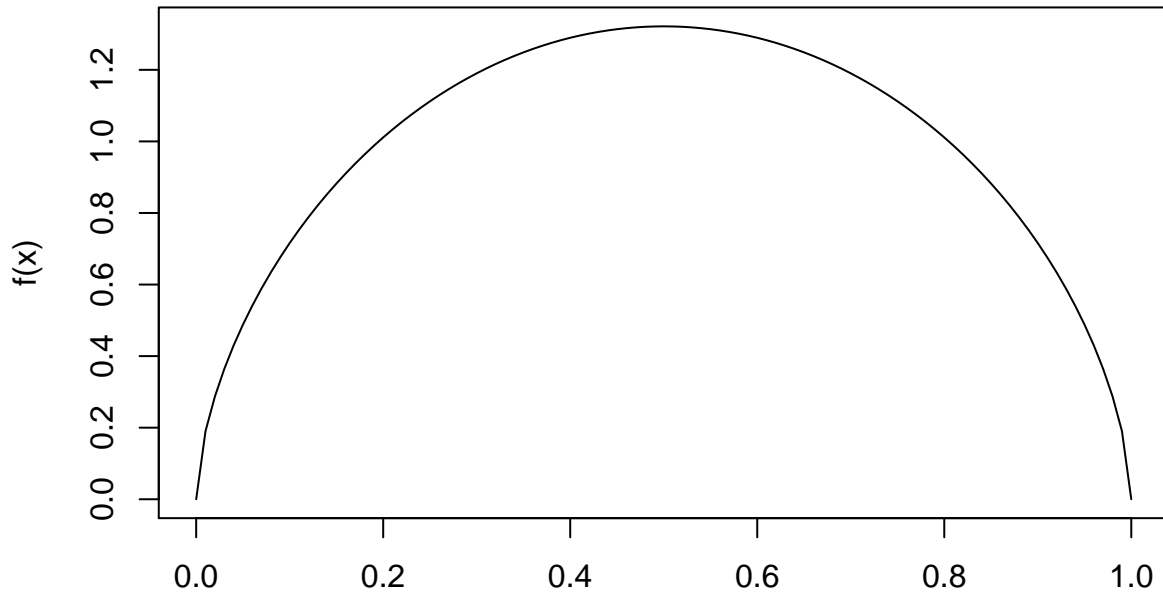
**alpha = 1.2**



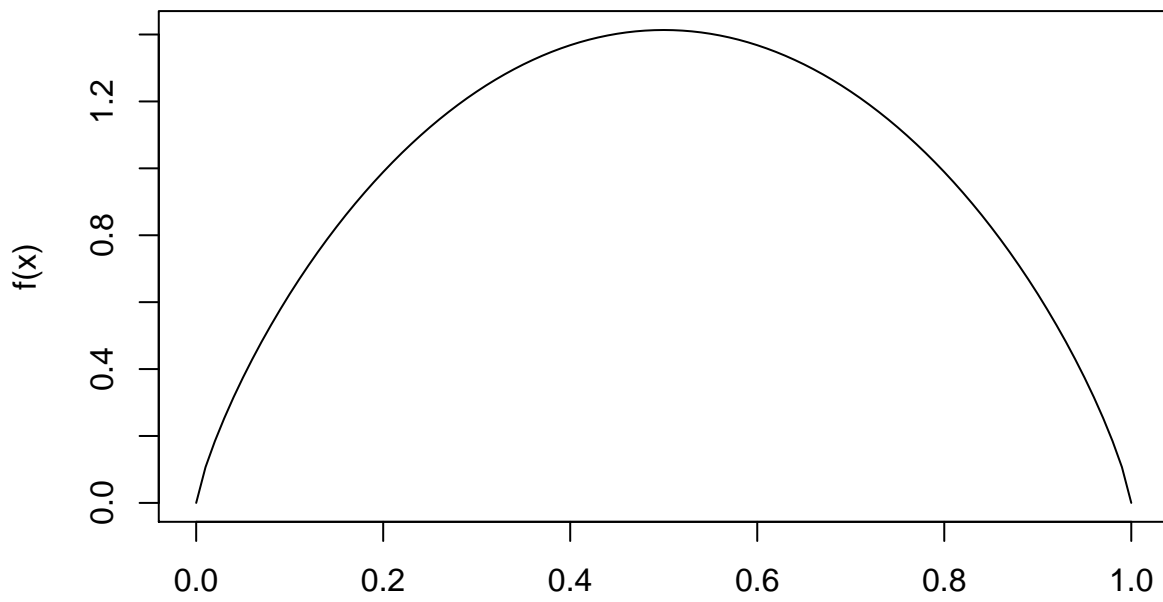
**alpha<sup>x</sup> = 1.4**



**alpha = 1.6**



**alpha<sup>x</sup> = 1.8**



x

**alpha = 2**

