

## 4.4 Additional Applications; Exponential Models

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Ex 1 Analyze + sketch graph of :

(a)  $f(x) = xe^{-x}$

(b)  $f(x) = \frac{\ln x}{x}$ ,  $x > 0$

## 4.4 (cont)

Ex 2 Analyze + sketch graph.  
 $f(x) = (\ln x)^2 \quad x > 0$

Ex 3 A child's capacity to learn is given by  
 $L(t) = \frac{\ln(t+1)}{t+1}$ , where  $t =$  child's age (in years)

for  $t \in [0, 5]$  +  $L$  is capability to learn.

- (a) At what age does child have greatest learning capacity?  
(b) At what age is child's learning capability increasing most rapidly?