Table 17.4. Exponential and Weibull Distributions: pdf, cdf, Survivor Function, Hazard, Cumulative Hazard, Mean, and Variance

Function	Exponential	Weibull
f(t)	$\gamma \exp(-\gamma t)$	$\gamma \alpha t^{\alpha-1} \exp(-\gamma t^{\alpha})$
F(t)	$1 - \exp(-\gamma t)$	$1 - \exp(-\gamma t^{\alpha})$

$$F(t) \qquad 1 - \exp(-\gamma t) \qquad 1 - \exp(-\gamma t^{\alpha})$$

$$S(t) \qquad \exp(-\gamma t) \qquad \exp(-\gamma t^{\alpha})$$

$$\lambda(t) \qquad \gamma \qquad \gamma \alpha t^{\alpha - 1}$$

$\exp(-\gamma t)$	
$\gamma \qquad \qquad \gamma \alpha t^{\alpha -}$	·1
γαι	
vt vt^{α}	
γt γt^{α}	

 $\gamma > 0, \alpha > 0$

γ	$\gamma \alpha t^{\omega}$
<i>,</i> -	γt^{α}
· · -1	$\chi^{-1/\alpha}\Gamma(\alpha^{-1}\perp 1)$

vt	vt^{α}	
$\frac{7}{1}$	<i>/</i> ·	
ν	$\gamma^{-1/\alpha}\Gamma(\alpha^{-1}+1)$	

$$\begin{array}{lll} \Lambda(t) & \gamma t & \gamma t^{\alpha} \\ \mathrm{E}[T] & \gamma^{-1} & \gamma^{-1/\alpha} \Gamma(\alpha^{-1}+1) \\ \mathrm{V}[T] & \gamma^{-2} & \gamma^{-2/\alpha} [\Gamma(2\alpha^{-1}+1) - [\Gamma(\alpha^{-1}+1)]^2] \end{array}$$

V[T]

 γ, α