

# STA 5364, Report 1.5

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## 1.5

To derive the hazard function of a Weibull, we must first begin with the definition of a hazard function. Per the notes from class (1.2.2), we know the hazard function is

$$h(x) = \frac{f(x)}{S(x)}.$$

Therefore, the hazard function for a Weibull distribution is

$$\begin{aligned} h(x) &= \frac{\alpha \lambda x^{\alpha-1} e^{-\lambda x^\alpha}}{e^{-\lambda x^\alpha}} \\ &= \alpha \lambda x^{\alpha-1}. \end{aligned}$$