

UNIVERSITY OF TEXAS AT AUSTIN

Problem set 3The tail formula for expectation.

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**The Weibull distribution.** The nonnegative random variable  $X$  is said to have the *Weibull distribution* if its cumulative distribution function is of the form

$$F_X(x) = 1 - e^{-\left(\frac{x}{\theta}\right)^\tau}$$

*Remark 3.1.* In the special case that  $\tau = 1$ , we get the *exponential distribution*.

**Problem 3.1.** Let  $X \sim \text{Weibull}(\theta = 1, \tau = 2)$ . What is the expectation of  $X$ ?