

Problems from Assignment 12

1. Suppose that $X \sim t_1$ (a t -distribution with 1 degree of freedom is often called a Cauchy Distribution).
 - (a) Write $f_X(x)$ in its simplest form.
 - (b) Find $P(-2 \leq X \leq 3)$ without using a table.
 - (c) What is $E(X)$.
 - (d) Prove $\text{Var}(X) = \infty$.

2. Suppose that $X \sim F_{1,1}$.
 - (a) Write $f_X(x)$ in its simplest form.
 - (b) Find $P(1 \leq X \leq 2)$ without using a table.
 - (c) What is $E(X)$?