Distribuição Qui-Quadrado

$$Y \sim \chi^2(n)$$

n: graus de liberdade

$$f(y)=rac{1}{\Gamma(rac{n}{2})2^{n/2}}y^{rac{n}{2}-1e^{-y/2}},\quad y>0$$
 $E(Y)=n$ $Var(Y)=2n$

Distribuição T-student

 $T \sim t(n)$

$$egin{align} f(t) = TDen(t;n) &= rac{\Gamma(rac{n+1}{2})}{\Gamma(rac{n}{2})\sqrt{\pi n}}igg(1+rac{t^2}{n}igg)^{-(n-1)/2} \ &E(T) = 0, \quad n \geq 2 \ &Var(T) = rac{n}{n-2}, \quad n \geq 3 \ \end{aligned}$$

$$Z \sim N(0,1)$$
 e $X \sim \chi^2(n)$

$$T = \frac{Z}{\sqrt{X/n}}$$

é chamada de t de Student com n graus de liberdade. $T \sim t(n)$