"Determine the density function from the distribution function"

```
Simplify[D[1 - GammaRegularized[ test / 2 ,
    test tsen mu / ( 4 p InverseGammaRegularized[tsen / 2, x])], x]]
```

Determine the density function from the distribution function

$$\frac{1}{\text{Gamma}\left[\frac{\text{test}}{2}\right]}\, 2^{-\text{test}}\, e^{-\frac{\text{mu test tsen}}{4\,\text{p InverseGammaRegularized}\left[\frac{\text{tsen}}{2},x\right]}+\text{InverseGammaRegularized}\left[\frac{\text{tsen}}{2},x\right]}$$

$$\text{Gamma}\left[\frac{\text{tsen}}{2}\right]\left(\frac{\text{mu test tsen}}{\text{p InverseGammaRegularized}\left[\frac{\text{tsen}}{2},x\right]}\right)^{\text{test}/2}$$

$$\text{InverseGammaRegularized}\left[\frac{\text{tsen}}{2},x\right]^{-\text{tsen}/2}$$

```
InverseGammaRegularized[4, 0.5]
```

3.67206

```
GammaRegularized[4, 0.5]
```

0.998248