Theorem The standard Wald distribution is a special case of the inverse Gaussian distribution when $\mu = 1$.

Proof The inverse Gaussian distribution has probability density function

$$f(x) = \sqrt{\frac{\lambda}{2\pi x^3}} e^{-\frac{\lambda}{2\mu^2 x}(x-\mu)^2} \qquad x > 0.$$

When $\mu = 1$, this becomes

$$f(x) = \sqrt{\frac{\lambda}{2\pi x^3}} e^{-\frac{\lambda}{2x}(x-1)^2} \qquad x > 0,$$

which is the probability density function of the standard Wald distribution.

APPL verification: The APPL statements

```
X := InverseGaussianRV(lambda, mu);
subs(mu = 1, X[1][1](x));
```

yield the probability density function of the standard Wald distribution.