

$$\frac{\sec(x)+1}{\tan^2(x)} = \frac{\frac{1}{\cos(x)}+1}{\tan^2(x)+1-1} = \frac{\frac{1}{\cos(x)}+1}{\frac{1}{\cos^2(x)}-1} = \frac{\frac{1}{\cos(x)}+1}{\left(\frac{1}{\cos(x)}-1\right)\left(\frac{1}{\cos(x)}+1\right)} = \frac{1}{\frac{1}{\cos(x)}-1} = \frac{1}{\sec(x)-1}$$