

The error in the previous page come from the reasoning that the velocity is 1 in both components. What we require is that the MAGNITUDE of the velocity is 1. Therefore if we consider for point on the x-axis ( $y=0$ ), then

$$\left[ \frac{x}{2u(y^2+x^2)} \right]^2 + \left[ \frac{y}{2u(y^2+x^2)} \right]^2 = 1^2$$

$$\Rightarrow \left( \frac{1}{2u x} \right)^2 = 1$$

$$\frac{1}{2u x} = 1 \Rightarrow x = \frac{1}{2u}$$