• A rug of linear mass density λ is folded over and pulled at a speed ν . What force is required to do this?

$$\lambda = \frac{m}{L}$$



$$f = \frac{\Delta P}{\Delta t} = \frac{mV}{\Delta t}$$

Advance time by
$$\Delta t$$

(sock) from top and $\Rightarrow \Delta x = v\Delta t$ (front) mass of string to starts to move

Already moving $\Rightarrow \Delta x = v\Delta t$ (front)

 $\Delta p = \lambda \frac{\Delta x}{2}$, $v = \lambda \frac{v\Delta t}{2}$.

 $\Delta p = \lambda \frac{v\Delta t}{2}$.

 $\Delta v = \lambda \frac{v\Delta t}{2}$.

$$F = \frac{\lambda v^2 \Delta t}{2} = \frac{\lambda v^2}{2}$$