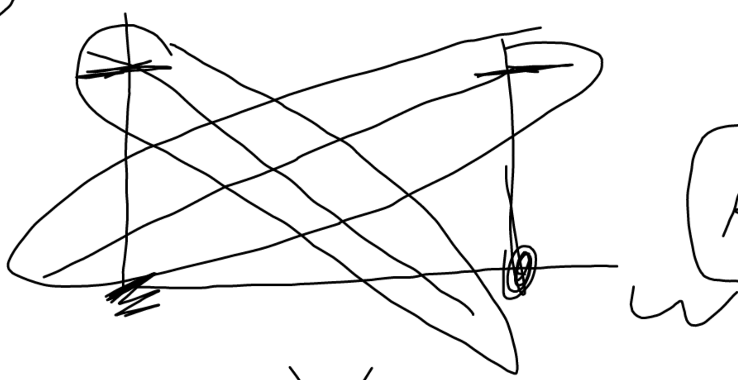
$$\sigma = (w, 1-w) \qquad \pi = (h, 1-h)$$

$$\boxed{u(\sigma, \pi) = w(1-h)v + (1-w)(1-h)\frac{v}{2} + wh\frac{v-c}{2}}$$

$\sigma$ does in $\pi^* = (w^*, 1-w^*)$

$h = w^*$

$$u(\sigma, \pi^*) = w(1-w^*)v + (1-w)(1-w^*)\frac{v}{2} + ww^*\frac{v-c}{2}$$




$$\boxed{Aw + B}$$

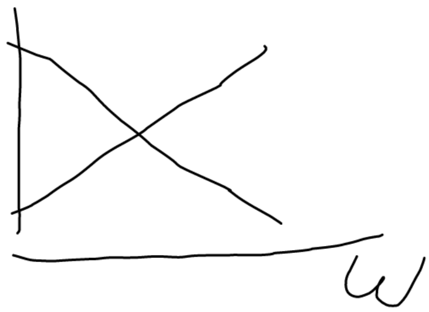
$$= \frac{v}{2}(1-w^*)(2w + 1 - w) + ww^*\frac{v-c}{2}$$

$$= \underbrace{\frac{v}{2}(1-w^*)}_{B} + \underbrace{\frac{v}{2}(1-w^*)w + ww^*\frac{v-c}{2}}_{Aw}$$

$$= \frac{v}{2}(1-w^*) + \frac{v}{2}w - \cancel{\frac{v}{2}ww^* + \frac{v}{2}ww^*}$$

$$\frac{ww^*c}{\phantom{x}}$$

$$\boxed{= \frac{v}{2}(1-w^*) + \frac{wc}{2}\left(\frac{v}{c} - w^*\right)^2}$$



- if $w^* < \frac{v}{c}$ $\nearrow$ $w = 1$
- $w^* > \frac{v}{c}$ $\searrow$ $w = 0$
- $w^* = \frac{v}{c}$ indifference.

$$\boxed{\sigma^* = \left(\frac{v}{c}, 1 - \frac{v}{c}\right)}$$

$$x_\varepsilon = \left(\frac{v}{c} + \varepsilon\left(w - \frac{v}{c}\right), 1 - \frac{v}{c} - \varepsilon\left(w - \frac{v}{c}\right.\right.$$

$$u(\sigma, x_\varepsilon) = \frac{v}{2}\left(1 - \frac{v}{c} + \varepsilon\left(\frac{v}{c} - w\right)\right) + \left(\frac{v}{c} - \frac{v}{c} + \varepsilon\left(\frac{v}{c} - w\right)\right)\frac{wc}{2}$$

$$\boxed{= \frac{v}{2}\left(1 - \frac{v}{c} + \varepsilon\left(\frac{v}{c} - w\right)\right) + \varepsilon\frac{wc}{2}\left(\frac{v}{c} - w\right)}$$

$$\left(\frac{v}{c}, 1 - \frac{v}{c}\right)$$

$$u(\sigma^*, x_\varepsilon) = \frac{v}{2}\left(1 - \frac{v}{c} + \varepsilon\left(\frac{v}{c} - w\right)\right) + \varepsilon\frac{v}{2}\left(\frac{v}{c} - w\right)$$

$$\boxed{= \frac{v}{2}\left(1 - \frac{v}{c} + 2\varepsilon\left(\frac{v}{c} - w\right)\right)}$$

$$u(\sigma^*, x_\varepsilon) - u(\sigma, x_\varepsilon) = \frac{v}{2}\varepsilon\left(\frac{v}{c} - w\right) - \varepsilon\frac{wc}{2}\left(\frac{v}{c} - w\right)$$

$$= \left(\frac{v}{c} - w\right)\left(\frac{v}{2}\varepsilon - \frac{\varepsilon w c}{2}\right)$$

$$= \frac{\varepsilon c}{2}\left(\frac{v}{c} - w\right)\left(\frac{v}{c} - w\right)$$

$$= \frac{\varepsilon c}{2}\left(\frac{v}{c} - w\right)^2 > 0$$