A hint on PS3, problem 1.7.1

Note that p_L is the point where the linear function $f(p) = pv$ equals the function $r(p)$, likewise p_U is where $r(p) = (1 - p)w$.

There is change of scale on the vertical axis to make $v + w = 1$, which would mean changing the unit of money to \$40. But this does not change the value of p_L or p_U, because all three functions pv, $r(p)$, and $(1 - p)w$ would be multiplied by the same constant $1/40$.