b) MVP $\Rightarrow$ SPP

fixed λ, arbitr. μ

- $b(u,v) - \langle g, v\rangle = 0 \quad \forall\, v = \lambda - \mu \in \Lambda$

$\Updownarrow \qquad \geq$

$b(u,\lambda) - \langle g,\lambda\rangle \geq b(u,\mu) - \langle g,\mu\rangle \quad \forall \mu \in \Lambda$

$\Updownarrow$

$L(u,\lambda) \geq L(u,\mu) \quad \forall \mu \in \Lambda \Leftrightarrow (\ell)$

- $u \in X$; $a(u,v) + b(v,\lambda) = \langle f, v\rangle \quad \forall v \in X,\ \lambda \in \Lambda$

$\Updownarrow$ ← see a)

$u \in X$: $\frac{1}{2} a(u,u) - \langle f,u\rangle + [b(u,\lambda) - \langle g,\lambda\rangle] \leq$

$\leq \frac{1}{2} a(v,v) - \langle f,v\rangle + [b(u,\lambda) - \langle g,\lambda\rangle] \quad \forall v \in X$

$\Updownarrow$

$L(u,\lambda) \leq L(v,\lambda) \quad \forall v \in X \Leftrightarrow (v)$

q.e.d.