$$X = \bigcup_i F^i(\emptyset)$$

1. X IS <u>SOME</u> FIXED PT OF F

$$F(X) = F\left(\bigcup_i F^i(\emptyset)\right) \quad \cdots X$$

$$= \bigcup_i F(F^i(\emptyset))$$

$$= \bigcup_i F^{i+1}(\emptyset)$$

$$= \emptyset \cup \bigcup_i F^{i+1}(\emptyset)$$

$$= F^0(\emptyset) \cup \bigcup_i F^{i+1}(\emptyset)$$

$$= \bigcup_i F^i(\emptyset)$$

$$= X$$

2. ~~A~~ $Y \subset X$ ALSO A FIXED PT

ASSUME B.W.O.C. THAT $Y \subset X$ IS A ~~FX~~ PT

$$F^i(\emptyset) \subseteq Y \quad \forall i$$

BASE CASE <u>$i = 0$</u> $\quad F^0(\emptyset) = \emptyset \subseteq Y$

INDUCTIVE CASE $\quad$ ASSUME $F^i(\emptyset) \subseteq Y$

$$\Rightarrow \quad F^{i+1}(\emptyset) \subseteq Y$$

$$\boxed{\begin{array}{c} X \subseteq Y \Rightarrow \\ F(X) \subseteq F(Y) \end{array}}$$

$$F(F^{i}(\emptyset)) \subseteq F(Y)$$

$$F^{i+1}(\emptyset) \subseteq F(Y)$$

$$F^{i+1}(\emptyset) \subseteq Y$$

$$\overset{\subseteq Y}{F^{0}(\emptyset)} \subseteq \overset{\subseteq Y}{F^{1}(\emptyset)} \subseteq \cdots$$

$$\underbrace{\bigcup_i F^{i}(\emptyset)} \subseteq Y$$

$$X \subseteq Y$$

$$\Rightarrow \Leftarrow$$

$$= \{ (\sigma, \sigma'') \mid (\sigma, \sigma'') \in [\![c]\!] \}$$

$$= \{ (\sigma, \sigma'') \mid \exists \sigma', (\sigma, \sigma') \in [\![c]\!] \wedge (\sigma', \sigma'') \in C[\![\mathrm{skip}]\!] \}$$

$$= C[\![c ; \ \mathrm{skip}]\!]$$