Program Equivalence is a Congruence

Definition $\text{cequiv} \ (c1 \ c2 : \text{com}) : \text{Prop} :=$

$\forall \ (st \ st' : \text{state}),$

$(st = [c1] => st') \leftrightarrow (st = [c2] => st').$
Program Equivalence is a Congruence

\[
\text{cequiv } c \ c' \\
\text{cequiv } (c; \ c_2) \ (c'; \ c_2)
\]

\[
\text{bequiv } b \ b' \ \text{cequiv } c \ c' \\
\text{cequiv } (\text{WHILE } b \ \text{DO } c) \ (\text{WHILE } b' \ \text{DO } c')
\]