Use a joint truth table to compare the following logical expressions. For which pairs or expressions does one logically follow from the other. Which pairs are logically equivalent?
$E = (A \implies B) \implies C$.
$F = A \implies (B \implies C)$.
$G = (B \implies C) \implies (A \implies C)$.
$H = (A \implies C) \implies (B \implies C)$.
$I = (A \implies C) \iff (B \implies C)$.

	a	b	c	$((a$	$\rightarrow$	$b)$	$\rightarrow$	$c)$
	1	1	1	1	1	1	**1**	1
	1	1	0	1	1	1	**0**	0
	1	0	1	1	0	0	**1**	1
E:	1	0	0	1	0	0	**1**	0
	0	1	1	0	1	1	**1**	1
	0	1	0	0	1	1	**0**	0
	0	0	1	0	1	0	**1**	1
	0	0	0	0	1	0	**0**	0

	a	b	c	$(a$	$\rightarrow$	$(b$	$\rightarrow$	$c))$
	1	1	1	1	**1**	1	1	1
	1	1	0	1	**0**	1	0	0
	1	0	1	1	**1**	0	1	1
F:	1	0	0	1	**1**	0	1	0
	0	1	1	0	**1**	1	1	1
	0	1	0	0	**1**	1	0	0
	0	0	1	0	**1**	0	1	1
	0	0	0	0	**1**	0	1	0

	a	b	c	$((b$	$\rightarrow$	$c)$	$\rightarrow$	$(a$	$\rightarrow$	$c))$
	1	1	1	1	1	1	**1**	1	1	1
	1	1	0	1	0	0	**1**	1	0	0
	1	0	1	0	1	1	**1**	1	1	1
G:	1	0	0	0	1	0	**0**	1	0	0
	0	1	1	1	1	1	**1**	0	1	1
	0	1	0	1	0	0	**1**	0	1	0
	0	0	1	0	1	1	**1**	0	1	1
	0	0	0	0	1	0	**1**	0	1	0

	a	b	c	$((a$	$\rightarrow$	$c)$	$\rightarrow$	$(b$	$\rightarrow$	$c))$
	1	1	1	1	1	1	**1**	1	1	1
	1	1	0	1	0	0	**1**	1	0	0
	1	0	1	1	1	1	**1**	0	1	1
H :	1	0	0	1	0	0	**1**	0	1	0
	0	1	1	0	1	1	**1**	1	1	1
	0	1	0	0	1	0	**0**	1	0	0
	0	0	1	0	1	1	**1**	0	1	1
	0	0	0	0	1	0	**1**	0	1	0

	a	b	c	$((a$	$\rightarrow$	$c)$	$\leftrightarrow$	$(b$	$\rightarrow$	$c))$
	1	1	1	1	1	1	**1**	1	1	1
	1	1	0	1	0	0	**1**	1	0	0
	1	0	1	1	1	1	**1**	0	1	1
I :	1	0	0	1	0	0	**0**	0	1	0
	0	1	1	0	1	1	**1**	1	1	1
	0	1	0	0	1	0	**0**	1	0	0
	0	0	1	0	1	1	**1**	0	1	1
	0	0	0	0	1	0	**1**	0	1	0

Since $I = H \wedge G$, $I \implies H$ and $I \implies G$ since as shown above none of the statements are tautologies, therefore since $I = H \wedge G$, then $H \wedge G \implies H$ and $H \wedge GimpliesG$. Which happen to be tautologies, thus they logically follow. However they aren't logically equivalent as $H \implies H \wedge G$ isn't. E is a logical implication of H, and E is a logical implication of F. None of the pairs are logically equivalent.