Problem 8

inductive step

$$\frac{1}{1\cdot 2}+\frac{1}{2\cdot 3}+\dots+\frac{1}{k(k+1)}=1-\frac{1}{k+1}$$

$$\frac{1}{1\cdot 2}+\frac{1}{2\cdot 3}+\dots+\frac{1}{k(k+1)}+\frac{1}{(k+1)(k+2)}=$$

$$=1-\frac{1}{k+1}+\frac{1}{(k+1)(k+2)}=1+\frac{-(k+2)+1}{(k+1)(k+2)}=$$

$$=1+\frac{-k-1}{(k+1)(k+2)}=1-\frac{1}{k+2}$$

Problem 2

X	Y	$\neg X$	$\Leftrightarrow$	Y	$\neg(X \vee Y)$
1	1	0	0		0
1	0	0	1		0
0	1	1	1		0
0	0	1	0		1