Name:

<center>Warm-up #7</center>

Let x_n and y_n be bounded sequences of real numbers. Suppose that there is an N_0 such that if $n \geqslant N_0$, then $x_n \leqslant y_n$. Show that if $N \geqslant N_0$, then

$$\sup_{n \geqslant N} x_n \leqslant \sup_{n \geqslant N} y_n.$$