

## Math 325. Quiz #6

(1) State the *monotone convergence theorem*.

(2) True or False (& justify with argument or counterexample):

If  $\{a_n\}_{n=1}^{\infty}$  is a divergent sequence then either  $\{a_n\}_{n=1}^{\infty}$  diverges to  $+\infty$  or  $\{a_n\}_{n=1}^{\infty}$  diverges to  $-\infty$ .

(3) Prove or disprove: If  $\{a_n\}_{n=1}^{\infty}$  diverges to  $-\infty$  then  $\{-a_n\}_{n=1}^{\infty}$  diverges to  $+\infty$ .