

Math 325. Quiz #5

(1) State the definition of a **strictly increasing** sequence.

(2) *True or false*, and *justify* with a short proof or example:

If $\{a_n^2 - 3\}_{n=1}^{\infty}$ converges to 1 then $\{a_n\}_{n=1}^{\infty}$ converges to 2 ($= \sqrt{1+3}$).

(3) *True or false*, and *justify* with a short proof or example:

If $\{a_n\}_{n=1}^{\infty}$ is a divergent sequence, then $\{\frac{2}{5}a_n\}_{n=1}^{\infty}$ is also divergent.