

Quiz 4

MATH 1B, SPRING 2012

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SECTION:

NAME:

Find the limit of the sequence

$$\left\{ \sqrt{2}, \sqrt{2\sqrt{2}}, \sqrt{2\sqrt{2\sqrt{2}}}, \dots \right\}.$$

As part of this problem, you should:

1. Find a recurrence relation for the sequence.
2. Prove that the sequence converges (Hint: Use the Monotone Sequence Theorem).
3. Calculate the limit.