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## MA 26500 Quiz 8

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1. Let  $\ell^2(\mathbb{R})$  be the set of all sequences  $\{a_n\}$  whose sum of squares converges, i.e.,

$$\sum_{n=1}^{\infty} a_n^2 < \infty.$$

Show that  $\ell^2(\mathbb{R})$  is a vector space.

2.