

**An element  $x$  of a Banach algebra such  $r(x) < \|x\|$ .**

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Consider  $x = \begin{bmatrix} 0 & 1 \\ 0 & 0 \end{bmatrix}$  in the  $C^*$ -algebra  $M_2(\mathcal{C}) \simeq B(\mathcal{C}^2)$ . Then  $sp(x) = \{0\}$ . So  $r(x) = 0$ . But  $\|x\| = 1$  (since its associated operator  $T(z_1, z_2) = (z_2, 0)$  has norm 1).