

# Re: involution has fixed point

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*Source:* <http://sci.tech--archive.net/Archive/sci.math/2005-12/msg00339.html>

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- *From:* [israel@xxxxxxxxxxx](mailto:israel@xxxxxxxxxxx) (Robert Israel)
  - *Date:* 1 Dec 2005 18:19:40 GMT
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In article <20875368.1133428489785.JavaMail.jakarta@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>, Koen Thas <kthas@xxxxxxxxxxx> wrote:

>Hi,

>there is an easy solution, relying on the case  $n = 2$ .

>

>Let  $L$  be any line of  $\mathbb{R}^n$ ,  $n > 2$ , and let  $f$  be the involution. If

> $L^f$  meets  $L$  in a point, and  $L^f$  is not  $L$ , the intersection point

>is fixed, and we are done.

>So for any line  $L$ ,  $L$  and  $L^f$  generate a 3-subspace  $\mathbb{R}^3$  which

>is fixed (globally) by  $f$ .

You seem to be assuming that  $f$  is a linear (or at least affine) map.

The real question is for nonlinear  $f$ .

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◇ *From:* Fedor

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◇ *From:* Koen Thas

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