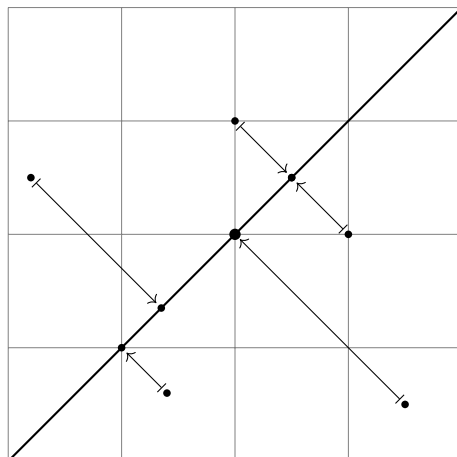


**MATH 1553**  
**QUIZ #5: §§4.2, 4.3**

<b>Name</b>		<b>Section</b>	
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1. Let  $T: \mathbf{R}^2 \rightarrow \mathbf{R}^2$  be the linear transformation that slides a point diagonally up or down at a  $45^\circ$  angle until it hits the line  $y = x$ , as in the following picture:



- a) [4 points] Compute the standard matrix for  $T$ .
- b) [3 points] Is  $T$  one-to-one? If so, explain why; if not, find two different vectors with the same image.
- c) [3 points] Is  $T$  onto? If so, explain why; if not, find a vector not in the range.