

### Proposition 6

Let  $E$  be any elementary matrix, let  $e$  be its corresponding elementary row ops. We know that there is another row ops  $f$  of the same type that reverses the action of  $e$ . Let  $F$  be the elementary matrix corresponding to  $f$ . Then:

$$FE = (FE)I = F(EI) = f(e(I)) = I \text{ (using prop. 5)}$$

Similarly,  $EF = I$ , so  $F$  is  $E^{-1}$