

Graded Assignment 4
Math 341 - Fall 2002
Prof. John A. Pelesko

This assignment is to be handed in on December 9th. You are encouraged to work together, but the work you hand in must be your own.

(1) (10 points) Suppose $f : \mathbf{R}^2 \rightarrow \mathbf{R}^2$ takes vectors and leaving their orientation unchanged, shrinks their length by a factor of $1/3$. Write the matrix corresponding to f and determine what f does to the vector

$$\begin{bmatrix} -2 \\ 3 \end{bmatrix}$$

(2) (10 points) Compute the product of the matrix you defined from problem (1) with the matrix

$$\begin{bmatrix} 1 & 1 \\ -2 & 3 \end{bmatrix}$$