# CV202, HW2

Dan Tsir Cohen, ID 208538314  
Nir Ben Zikri, ID #######

## Problem 18

The answer is no. There is no continuous curve , from the unit interval to the affine group, such that and .

We will show that by observing any possible continuous curve , , such that:

We know that:

is a continuous curve, so for any :

And is continuous!

Now, as we know from the Leibniz formula, a determinant of a matrix is a polynomial expression of the matrix entries. Every entry in our is continuous over , therefore we can say is a continuous curve as well!

Now we know it begins in , and ends at , therefore exists such that !

So we can see that we do not have the case , showing no continuous curve exists between the two affine maps.

## Problem 19

## Problem 20

## Problem 21

## Problem 25

## Problem 26

## Problem 29

## Problem 30