Q3.

import numpy as np

from numpy.linalg import inv

def HW2\_Q3():

trans\_matrix = np.matrix([[ 1, 0, 0, 0, 0, 0],

[ 0, 1, 0, 0, 0, 0],

[ 0, 0, 1, 0, 0, 0],

[.1, .2, .3, 0, 0, .4],

[.2, .4, 0, .2, .2, 0]])

i\_matrix = np.matrix([[trans\_matrix[0,0], trans\_matrix[0,1], trans\_matrix[0,2]],

[trans\_matrix[1,0], trans\_matrix[1,1], trans\_matrix[1,2]],

[trans\_matrix[2,0], trans\_matrix[2,1], trans\_matrix[2,2]]])

q\_matrix = np.matrix([[trans\_matrix[3,3], trans\_matrix[3,4], trans\_matrix[3,5]],

[trans\_matrix[4,3], trans\_matrix[4,4], trans\_matrix[4,5]],

[ 0, 1, 0]]) #borrow 1

r\_matrix = np.matrix([[trans\_matrix[3,0], trans\_matrix[3,1], trans\_matrix[3,2]],

[trans\_matrix[4,0], trans\_matrix[4,1], trans\_matrix[4,2]],

[ 0, 0, 0]])

f\_matrix = (i\_matrix - q\_matrix)

f\_matrix = inv(f\_matrix)

fr\_matrix = f\_matrix \* r\_matrix

lim\_trans\_matrix = np.matrix([[trans\_matrix[0,0], trans\_matrix[0,1], trans\_matrix[0,2], trans\_matrix[0,3], trans\_matrix[0,4], trans\_matrix[0,5]],

[trans\_matrix[1,0], trans\_matrix[1,1], trans\_matrix[1,2], trans\_matrix[1,3], trans\_matrix[1,4], trans\_matrix[1,5]],

[trans\_matrix[2,0], trans\_matrix[2,1], trans\_matrix[2,2], trans\_matrix[2,3], trans\_matrix[2,4], trans\_matrix[2,5]],

[fr\_matrix[0,0], fr\_matrix[0,1], fr\_matrix[0,2], 0, 0, 0],

#[fr\_matrix[1,0], fr\_matrix[1,1], fr\_matrix[0,2], 0, 0, 0],

#^^^delete borrowed row^^^

[fr\_matrix[2,0], fr\_matrix[2,1], fr\_matrix[2,2], 0, 0, 0]])

print(lim\_trans\_matrix)

HW2\_Q3()

Output==========================================================================

runfile('C:/Users/NAO/Desktop/EE381/HW2/HW2\_Q3.py', wdir='C:/Users/NAO/Desktop/EE381/HW2')

[[ 1. 0. 0. 0. 0. 0. ]

[ 0. 1. 0. 0. 0. 0. ]

[ 0. 0. 1. 0. 0. 0. ]

[ 0.22222222 0.44444444 0.33333333 0. 0. 0. ]

[ 0.30555556 0.61111111 0.08333333 0. 0. 0. ]]