Homework 8. Due October 11

Problem 1. 2x5 points. Find not-trivial solution for building an unit 2x2 transport matrix out of repeating cells:

$$M^4 = I; M \neq I$$

(a) show that one of the solutions $trace(M) = 0$; Hint: used $M^2 = -I$;

(b) for a "symmetric" FODO cell and finite length equally strong quadrupoles $K_F = -K_D = K; l_F = l_D = L;\ l_1 = l_2 = l$ write the condition that $M_x^4 = M_y^4 = I$, e.g. the 4x4 transport matrix is unit.