

# Optional “Fun” Problems

**Problem E1.** Consider the the three linear least (LS) squares problems that arise when the alternating least squares framework is applied to the 2-by-2-by-2 problem. Outline a solution approach when these linear LS problems are solved using the method of normal equations. (Recall that the method of normal equations for the LS problem  $\min \|Mu - b\|_2$  involves solving the symmetric positive definite linear system  $M^T M u = M^T b$ .)

**Problem A1.** Repeat E1 but when  $\mathcal{A} \in \mathbb{R}^{2 \times 2 \times \dots \times 2}$  is an order-d tensor.