

# HW3: Problem 1

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## 1 Part 1

### 1.1 Subsection A

Here is the calculation for the first outer product:  $\begin{bmatrix} 0.43226352 & 0.25222353 & 0.48671532 \\ 0.10984608 & 0.06409462 & 0.12368328 \\ 0.42953904 & 0.25063381 & 0.48364764 \end{bmatrix}$ .

### 1.2 Subsection B

The first term for the Kruskal tensor is:  $\begin{bmatrix} 7.53169304 & 8.36104576 \\ 6.95335795 & 7.71902727 \\ 6.47565559 & 7.18872227 \\ 4.39470396 & 4.87862699 \\ 4.05724843 & 4.50401252 \\ 3.77851157 & 4.19458254 \\ 8.48045282 & 9.41427827 \\ 7.82926544 & 8.69138536 \\ 7.29138739 & 8.09427885 \\ 1.91394119 & 2.12469491 \\ 1.76697565 & 1.96154625 \\ 1.64558273 & 1.82678614 \\ 1.11677479 & 1.2397485 \\ 1.03102116 & 1.1445521 \\ 0.96018902 & 1.06592027 \\ 2.15503843 & 2.39234059 \\ 1.98955979 & 2.20864026 \\ 1.85287512 & 2.05690455 \\ 7.48422212 & 8.30834757 \\ 6.90953217 & 7.67037562 \\ 6.43484068 & 7.14341346 \\ 4.36700493 & 4.84787787 \\ 4.03167631 & 4.47562453 \\ 3.75469628 & 4.16814484 \\ 8.42700203 & 9.35494175 \\ 7.77991897 & 8.6366051 \\ 7.24543108 & 8.04326205 \end{bmatrix}$ .