Problem 6.1 [Analyzing Funnelsort]. Analyze Lazy Funnelsort from Lecture 9:

(a) Prove that a $K$-funnel (excluding its output buffer of size $K^3$) occupies $O(K^2)$ space.

(b) Prove that filling the output buffer of a $K$-funnel takes $O\left(\frac{K^3}{B} \log M K + K\right)$ memory transfers, assuming $M = \Omega(B^2)$. 