

Caches:

1. Distinguish between 3 categories for cache misses: Compulsory, Capacity, and Conflict. Define each category and discuss how the cache design influences the frequency of each cache miss category. (see Section 5.3 in H&P).

Does the addition of levels to the memory hierarchy influence the answer?

2. Are the following sentences true:

- (a) The blocks stored in  $L_i$  are also stored in  $L_{i+1}$ .
- (b) If a block  $B$  is stored in  $L_i$  and in  $L_{i+1}$ , then the contents are identical in both levels.

Which assumptions influence the correctness of each of the sentences?

3. The general purpose registers are the top level of the memory hierarchy. Do they fit the general framework that we discussed? Explain.

Discuss the possibility of not using general purpose registers.

4. Discuss allocation policies for inverted page tables.
5. Look in the literature for details about “page coloring”.

What is it? What are its benefits and costs?