1. List and define the three C’s.
   1. Conflict -- cache misses due to data being evicted from the cache.
   2. Capacity -- misses due to the application accessing more data than can fit in the cache.
   3. Compulsory -- misses due to accessing data for the first time.

2. Give one technique for reducing each of them.
   1. Conflict -- increase associativity or cache size.
   2. Capacity -- restructure the application or increase capacity
   3. Compulsory -- increase cache line size or prefetch data

3. What’s the difference between write through and write back?
   1. Write through: update the data in next level memory for each write
   2. Write back: only update the copy of data in top level of memory hierarchy. Writes to the next level when data get evicted from memory.
1. What is a cache replacement policy?
   1. The cache replacement policy determine which line in a set to evict when a new cache line needs to be loaded into the cache.

1. A cache holds 8KB, is 2-way set associative, and has 16 byte lines. How many tag, index, and offset bits are there?
   1. offset = 4 bits
   2. index = 8 bits
   3. tag = 20