1. Fully associative (FA) caches

   a. Won't have conflicts like with a DM cache

   b. However, extremely expensive to implement in terms of both power and money

   c. Example
      i. Same cache parameters as before, except now a FA cache
      ii. 8-byte FA cache with line size of 2, and 4-bit address

Tag	**Set**	**Offset**

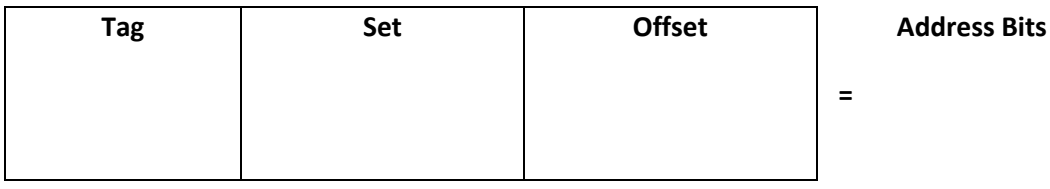
Address Bits

=

2. Set associative (SA) caches
    a. Compromise between DM and FA
    b. N-way SA cache

    c. Advantages and disadvantages of both DM and FA

    d. Example
        i. Same cache parameters as before, except now a 2-way SA cache
        ii. 8-byte 2-way SA cache with line size of 2, and 4-bit address



3. Cache replacement algorithms
    a. How do we evict lines from a given set for non-DM caches?

    b. Least recently used (LRU)

    c. First in, first out (FIFO)

    d. Least frequently used (LFU)

    e. Random

4. Cache write policies
    a. If we change values that reside in main memory, we make changes in cache first
    b. What happens when we need to evict a line?
    c. Write-back

    d. Write-through