

Midterm Review - Key Concepts

1. The PRAM model of parallel computation

- **forall** construct
- step complexity
- work complexity
- work-efficiency

2. Shared memory machines

- high-level programming models
 - loop-level parallelization
 - locks and barriers
 - OpenMP

3. Cache-coherent non-uniform memory access in shared memory multiprocessors

- caches implementation
 - capacity
 - misses (reads and writes)
 - coherence
 - consistency

4. Performance Measures

- Computational intensity: $\#flops / \#words$ (or cache lines)
- Cache-line movements
- Load-balance