

# Quiz 9

1. Name two techniques for achieving a CPI less than 1.
  1. Out of order execution.
  2. Wide issue
  3. VLIW
2. What is a CMP?
  1. more than one processor on a single die.
3. What is simultaneous multithreading?
  1. Running multiple threads at the same time in a single pipeline. Usually an out-of-order pipeline.
4. Give two reasons that a 2-way CMP will not always deliver 2x speedup.
  1. Parallel programming is very hard.
  2. Amdahl's law
5. Name two difficulties in implementing 2-wide superscalar pipeline.
  1. structural hazards because of difference is the "even" and "odd" pipelines.
  2. Control hazards between the two pipelines
  3. More complex forwarding.