

# Worksheet #8: Analysis of Map Reduce Example

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Name: \_\_\_\_\_

Net ID: \_\_\_\_\_

Analyze the total WORK and CPL for the Map-Reduce example in slide 13, under the following assumptions:

- Assume that each Map step has  $WORK = \text{number of in words}$ , and  $CPL=1$ 
  - For example,  $WORK=3$  and  $CPL=1$  for Map 1
- Assume that each Reduce step has  $WORK = \text{number of word-count pairs}$ , and  $CPL = \log_2(\text{number of occurrences for in word with largest count})$ 
  - For example,  $WORK=5$  for Reduce 1, and  $CPL = \log_2(4) = 2$
- Assume that the distribute, shuffle, and collect operations are free.

