

HW3

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2. I did for both `sin4_intrinc()` and `sin4_recc()`

3. The architecture I am running on is

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                64
On-line CPU(s) list:   0-63
Thread(s) per core:    2
Core(s) per socket:    8
Socket(s):              4
NUMA node(s):          8
Vendor ID:              AuthenticAMD
CPU family:            21
Model:                 2
Model name:             AMD Opteron(tm) Processor 6380
Stepping:               0
CPU MHz:                2499.940
BogoMIPS:               4999.88
Virtualization:        AMD-V
L1d cache:             16K
L1i cache:             64K
L2 cache:              2048K
L3 cache:              6144K
NUMA node0 CPU(s):     0-7
NUMA node1 CPU(s):     8-15
NUMA node2 CPU(s):     16-23
NUMA node3 CPU(s):     24-31
NUMA node4 CPU(s):     32-39
NUMA node5 CPU(s):     40-47
NUMA node6 CPU(s):     48-55
NUMA node7 CPU(s):     56-63
```

Running time

sequential: 0.424s

threads = 2: 0.339s

threads = 4: 0.185s

threads = 8: 0.155s

threads = 16: 0.147s