NO. Lian

DATE.

1. (a) P1 CPI = 0.1×1 + 0.2×3 + 0.3×4 + 0.4×2 = 2.7

P2 CPI = 0.1×4 + 0.2×5 + 0.3×6 + 0.4×2 = 4

P1 faster

Execution time P1 = 2.7/3 P2 = 4/4

(b) P1 = 2.7 P2 = 4

(c) P1 = 2.7×10^4 P2 = 4×10^4

2. (a) 500×1 + 150×5 + 100×5 + 100×2 / 2×10^9 = 1950/2×10^9 = 975 ns

(b) 500 + 150 + 100 + 100 = 850

1950/850 = 2.2941/2 CPI

(c) 500×1 + 150×5 + 50×5 + 100×2 = 1700 1700/2 = 850

975/850 = 1.14706 speed 1700/800 = 2.215 CPI

(d) 250×1 + 75×5 + 100×5 + 100×2 = 1325 1325/2 = 662.5 250 + 75 + 100×100 = 525

975/662.5 = 1.4717 speed 1325/525 = 2.52381 CPI

3. addi $sp, $sp, -8 leaf_procedure:

sw $t0, 0($sp) #i

sw $t1, 4($sp) #a

add $t1, $a0, $a1 # a = x+y

addi $t0, $a0, -2 # j = x-2

add $t1, $t1, $t0 # a = a+i

lw $t0, 0($sp)

lw $t1, 4($sp)

addi $sp, $sp, 8

jr $ra # return

add $v0, $t1, $zero # result

NO.

DATE.

4. -27.0625

2|27 1 = 11011
2|13 1
2|6 0
2|3 1
1

0.0625
0.125 0 0001
0.25 0
0.5 0
1 1

11011.0001

1.10110001 x2^4

127+4=131

2|131 1
2|65 1
2|32 0
2|16 0
2|8 0
2|4 0
2|2 0
1

1100 0011 1011 0001 0000...
C 1 D 8 8

0xc1d88000

5. 0xC0A80000

1100 0000 1010 1000 0000...

-1 129

2^2

1.0101 x2^2

101.01

= 5.25

1÷2=0.5

0.25

-5.25