Assignment 02 – Q3

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CPU Execution time = Instruction count \* CPI \* Clock cycle period

1. M1

CPI = 0.2\*4+0.1\*4 + 0.1\*3 + 0.05\*3 + 0.55\*3 = 3.3 instructions

clock period = 1 / 0.8 GHz = 1.25 \* 10^-9 seconds

Time = 3.3\*(1.25 \* 10^-9) \* 10^10 = 41.25 seconds

1. M2

CPI = 0.2\*5+0.1\*4 + 0.1\*3 + 0.05\*3 + 0.55\*4 = 4.05 instructions

clock period = 1 / 1 GHz = 10^-9 seconds

Time = 4.05\*(10^-9) \* 10^10 = 40.5 seconds

1. M3

CPI = (10^10 + 5 -1) / 10^10 = 1

clock period = 1 / 1.25 GHz = 8\*10^-10 seconds

Time = (10^10) \* 1 \* (8\*10^-10) = 8 seconds