(b) [6 points] Find the clock cycles required in both cases.

According to my Previous work from 3a, I calculated CPU clock cycles for Both Cases.

$P_1$ clock cycle required is $2.6 \times 10^6$ cycl

$P_2$ clock cycle required is $2 \times 10^6$

4. Compilers can have a profound impact on the performance of an application. Assume that for a program, compiler A results in a dynamic instruction count of 1.0E9 and has an execution time of 1.1s, while compiler B results in a dynamic instruction count of 1.2E9 and an execution time of 1.5s.

(a) [6 points] Find the average CPI for each program given that the processor has a clock cycle time of 1ns.

$\text{CPU time} = \frac{IC \times CPI \times \text{cycle time}}{IC}$ $\quad 1ns = 10^{-9}s$

$CPI = \frac{\text{CPU time}}{IC \times \text{cycle time}}$

$A \rightarrow CPI = \frac{1.1s}{10^9 \times 10^{-9}s} = 1.1$

$B \rightarrow CPI = \frac{1.5s}{1.2 \times 10^9 \times 10^{-9}s} = 1.25$