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CLASSWORK 01

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2 Different Processors = P1 & P2

P1 = 4 GHz Clock rate
= 1 CPI

P2 = 3 GHz Clock Rate
= 1.5 CPI

Which processor has the highest performance expressed in instructions per second?

P1 = 4GHz / 1 CPI = 4 $*10^9$ Instructions per second

P2 = 3 GHz / 1.5 CPI = 2 $*10^9$ Instructions per second

Consider 3 Different processors: P1, P2, P3

P1 = 3 GHz Clock rate
= 1.5 CPI
Instruction Per Second = 2 $*10^9$

P2 = 2.5 GHz Clock rate
= 1 CPI
Instruction Per Second = 2.5 $*10^9$

P3 = 4 GHz Clock rate
= 2.2 CPI
4 / 2.2 =
Instruction Per Second = 1.82 $*10^9$

HIGHEST PERFORMANCE: P2

If the processors each execute a program in 10 seconds, find the number of cycles and the number of instructions.

P1 = (2 $*10^{9)}$ * 10	= 2 $*10^{10}$ Instructions	10 Seconds / 1.5 = 6.67 Cycles
P2 = (2.5 $*10^{9)}$ * 10	= 2.5 $*10^{10}$ Instructions	10 Seconds / 1 = 10 Cycles
P3 = (1.82 $*10^9$) * 10	= 1.82 $*10^{10}$ Instructions	10 Seconds / 2.2 = 4.55 Cycles