Name:________________________________

Quiz 2 Addendum

cs341
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Allen B. Downey
Computer Science Department

1. If it takes 60 ns to get a word of data from memory, how many instructions can a 1.4 GHz processor execute while waiting for a word?

2. How long does it take to transmit a 1500B packet on an Ethernet with a bandwidth of 100 Mb per second? For painful historical reasons, a megabit (Mb) is 10^6 bits, unlike a megabyte (MB), which is 2^{20} bytes.

3. If the bandwidth of the I/O bus is 2 MB/s, what is the biggest block of data that can be moved across the bus in 0.5 ms?

4. If a context switch takes 1 ms and the default timer setting is 100,000 cycles, what percentage of CPU time is spent performing context switches on a 1 GHz computer?

5. If the bandwidth of the memory bus is 100 MB/s and the memory module can read one 4-byte word every 60 ns, how long would it take to read every byte in a 32-bit address space? Which is the limiting factor, the memory module or the bus?