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Task 3

1) The raspberry PI B+ has a quadcore CPU that includes RAM, a microSD chip reader, and USB ports.
2) It has four cores.
3) ARM has a simplified ISA, meaning it can sometimes be faster than x86 processors. ARM also has different modes for it's instructions, while x86 processors only have one. X86 processors also use little endian, while current ARM processors can switch between little and big endian.
4) Parallel computing is different from sequential computing because it can execute many different tasks at once, whereas sequential can only do one task at a time. As such, parallel computing can be faster, but there needs to be no dependencies between the various threads that are running, or else sequential computing must be done.
5) The basic form of data parallelism and task parallelism is that they're both types of parallel computing, but data parallelism focuses on finishing one task on lots of subsets of data, while task parallelism is oriented around doing different tasks on various sets of data.
6) Threads are a type of process that can be broken down into smaller steps, while processes are the entire program to be executed. A process can be made of many threads, but a thread cannot contain processes.
7) OpenMP is an interface introduced in the 90's that supports parallel processing and computing. OpenMP pragmas are compiler directives that allow for multithreaded code to be run and compiled.
8) Web servers, compilers, multimedia applications, web browsers.
9) Multicore is generally faster than single, lets the user do multiple activities at once, multicore CPUs can be more energy efficient than single core, and it takes up less space on a circuit board since the cores are packaged into one CPU.