name:	Juan Palos-Nava
course:	csci 10
assignment:	exercise 1a
prepared:	Mon, Aug 20, 2018 // 1:17 pm

1. What is a central processing unit (CPU)?

A CPU is the electronic circuitry inside a computer that carries out the instructions of a computer program by performing the basic arithmetic, logical, control and input/output operations specified by the program's instructions.

2. List the three principal components of a CPU.

The arithmetic logic unit (ALU), processor registers and a control unit.

3. What is the function of the arithmetic logic unit (ALU)?

The ALU performs arithmetic and logic operations.

4. What is the function of the processor registers?

The supply the ALU with operands and then store the results of all ALU operations.

5. What is the function of the control unit?

It orchestrates the fetching and exec of instructions by directing the coordinated operations of the ALU, registers and other components.

6. What is a microprocessor?

It's a processor that is contained in a single integrated circuit chip.

7. What is the fundamental operation of most CPUs?

The fundamental operation of most CPUs is to execute a sequence of stored instructions know as a program.

8. List and describe the steps of the CPU instruction cycle.

Fetch, decode and execute.
Fetching involves retrieving an instruction from program memory.
Decoding, the instruction decoder takes the instructions from the Fetch step and converts it into signals that control other parts of the CPU.
After Fetch and Decode are done it Executes. Depending on CPU architecture this can consist of one single action or a sequence of actions. During each action, various parts of the CPU are connected electrically so they can perform all or part of the desired operation and then the action is complete. Often the results are written to an internal CPU register for quick access by subsequent instructions.

9. What is a CPU instruction set?

A hardwired set of basic operations a CPU can perform.

10. What is x86?
It is a family of backward compatible instruction set architectures that is base on Intel's 8086 CPU. Named x86 because several successors of the 8086 contained the number 86 in the name.