Memory Systems

Part A Many PCs today have 16 million address memory systems with 8 bit words (bytes). Suppose they are built using one million address by four bit word DRAM memory chips. Answer the following questions about the memory systems design.

How many address lines does the memory system require? _____

How many data lines does the memory system require? _____

How many address lines does the DRAM memory chip require? _____

How many memory chips are required for the system? _____

What kind of address decoder is required? _____ to _____

Part B A new memory part is now available, a **four million** address by **four bit** word DRAM chip. Reconsider the design if this chip is used to build the same memory system.

How many address lines does the DRAM memory chip require? _____

How many memory chips are required for the system? _____

What kind of address decoder is required? _____ to _____

Part C The original IBM PC introduced in 1980 was socketed for **16 thousand** address by **one bit** word DRAM memory chips. Reconsider the design if this chip is used to build the same memory system.

How many address lines does the DRAM memory chip require? _____

How many memory chips are required for the system? _____

What kind of address decoder is required? _____ to _____