

# Questions for PASS Week 8 (Week 7 Content)

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1. Describe Data Size vs Addressing Quanta and what that means in the context of fetching data from memory
2. What is endianness?
3. What's the difference between big and little endian?
4. Describe the process of word alignment?
5. Why would it be inefficient accessing data overlapping word boundaries
6. How does word alignment decrease the memory requirements of a running application or piece of executing code.
7. What are some problems that arise from endianness?
8. What happens to the storage of arrays in memory with regards to endianness?
9. Describe the memory hierarchy, what problems does it solve?
10. In the memory hierarchy describe the relationship between speed and capacity (Also Cost \$)
11. What's the difference between SRAM and DRAM?
12. In magnetic disks what are tracks, blocks and the head?
13. In magnetic disks what is the difference between seek time and rotational delay?
14. What are the two kinds of data errors that occur?
15. What is parity? What's the difference between odd and even parity?
16. What is Hamming Distance?
17. Calculate the hamming distance for:
  - 100101 and 100001
  - 01101101 10101101
18. What logical operator can you apply to calculate the HD
19. For a code with hamming distance D:
  - How many errors can you *detect*?
  - How many errors can you *fix*?
20. What is a hamming code?
21. For the following words (which have the hamming code parity bits), workout if the word has an error and attempt to fix it.
  - 010101100011
  - 111110001100
  - 000010001010