Operating Systems HW4:

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1) A) False, uniform frame size guarantees nothing, internal fragmentation can still happen as processes will still be able to receive memory they will not have any use for.
   B) False, a full hierarchical page table takes up more space than a full linear page table, as it requires space for metadata such as pointers.
2) $32GB = 2^{35}B, 8KB = 2^{13}B \Rightarrow 2^{22} possible\ pages$, with each page-table entry storing a 64-bit value (pointer size on a 64-bit system) with 22 bits for the page index, 4 bits for metadata and the rest left unused. Hence the page table will require $2^{22} \cdot 8$ bytes of space, or around 0.0335 GB.