1.   **Answer:**
a)   Logical address: 16 bits
b)   Physical address: 18 bits

2.   **Answer:**
a)   A frame has the same size as a page, 2^{10} bytes.
b)   There is one entry for each page in the logical address space. Therefore, there are 2^{16} entries.
c)   The number of bytes in the logical address space is (2^{16} pages) × (2^{10} bytes/page) = 2^{26} bytes.
d)   The number of frames needed to store the largest page table is (2^{16} entries) × (2^2 bytes/entry) / 2^{10} bytes/frame = 2^8 frames.

3.   **Answer:**
a)
660+198=858
b)
222+156=378
c)
Invalid address because the length of segment 1 is 422 <530.

4.   **Answer**:
Segmentation: might require relocation of the segment that needs to be extended since there is not enough space for the segment to grow its allocated memory space.
Paging: incremental allocation of new pages is possible without requiring relocation of the program's address space.

Self-test
1.   D
2.   B
3.   B
4.   B
5.   C
6.   A