Problem 3.   (Hatcher § 4.1 Exercise 14 and more)

a.   Let X and Y be homotopy equivalent spaces. Assuming that X and Y admit CW-structures without $(n + 1)$-cells (for some $n \geq 0$), show that the n-skeleta X_n and Y_n are homotopy equivalent.

b.   Find an example of homotopy equivalent spaces X and Y, and CW-structures on X and Y such that for all $n \geq 0$, the n-skeleta X_n and Y_n are *not* homotopy equivalent.