

## HOMEWORK 10 – 2022

**Exercise 1.** An  $n$ -dimensional CW-complex  $X$  contains a subcomplex  $Y$  homotopy equivalent to  $S^n$ . Prove that the map  $\pi_n(X) \rightarrow \pi_n(Y)$  induced by the inclusion  $Y \hookrightarrow X$  is injective. (Hint: Use Hurewicz homomorphisms and long exact sequences of a pair.)