HOMEWORK 27

Note: $*$ marked problems might be slightly more difficult or interesting than the unmarked ones.

(1) Show that a retract of a contractible space is contractible.

(2) Show that $\mathbb{R}^n$ without a finite number of points is simply connected for $n \geq 3$. (Hint : Use induction.)

(3) Show that $\tilde{C}(S^{n-1}) \cong B^n$ for $n \geq 1$.

(4) Topology (Munkres), Chapter 9, Section 60, Exercise (1).

(5) Topology (Munkres), Chapter 9, Section 60, Exercise (2).

(6) Topology (Munkres), Chapter 9, Section 60, Exercise (3).

(7) Topology (Munkres), Chapter 11, Section 69, Exercise (1).

(8) Topology (Munkres), Chapter 11, Section 69, Exercise (3).

(9) Topology (Munkres), Chapter 11, Section 71, Exercise (2).