# Configuration Spaces

**Exercise 1**
Show that the fibre bundle

$$p_1 \colon F_{k-1}(\mathbb{R}_1^{n+1}) \to \mathbb{R}_1^{n+1}$$

with fibre $F_{k-2}(\mathbb{R}_2^{n+1})$ is trivial if $n = 3, 7$.

**Exercise 2**
Use 8.2 to show that the fibre bundle $p_1$ is not fibre homotopy trivial if $n \geq 2$ and $n \neq 3, 7$.

**Exercise 3**
Mimic the proof of 8.2 to show that for $1 \leq r < k - 1$, the fibre bundle

$$p_r \colon F_{k-r}(\mathbb{R}_r^{n+1}) \to \mathbb{R}_r^{n+1}$$

with fibre $F_{k-r-1}(\mathbb{R}_{r+1}^{n+1})$ is fibre homotopy trivial if and only if $r = 1$ and $n = 3$ or 7.