

$\mathbb{R}P^4$

$\mathbb{R}P^5$

$$\beta_5 = 1 - 0 = 1 \quad H_5 \cong \mathbb{Z}$$

$$\beta_4 = 1 - 1 = 0 \quad H_4 \cong 0$$

$$E^4 = (0) \quad \beta_4 = 1 - 0 - 1 = 0 \quad H_4 \cong 0$$

$$E^3 = (2)$$

$$\beta_3 = 1 - 1 - 0 = 0 \quad H_3 \cong \mathbb{Z}_2$$

$$E^2 = (0)$$

$$\beta_2 = 1 - 0 - 1 = 0 \quad H_2 \cong 0$$

$$E^1 = (2)$$

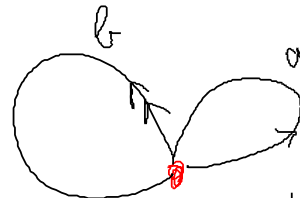
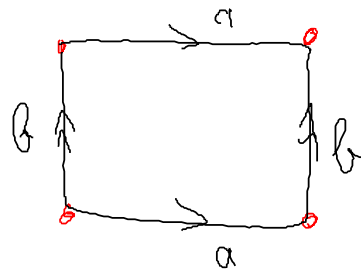
$$\beta_1 = 1 - 1 - 0 = 0 \quad H_1 \cong \mathbb{Z}_2$$

$$E^0 = (0)$$

$$\beta_0 = 1 - 0 = 1 \quad H_0 \cong \mathbb{Z}$$



$\langle a \rangle$



$\langle a, b \mid a^2 b^{-1} a^{-1} b^{-1} \rangle$