$\begin{array}{c} {\rm Mathematics~GU4053~Algebraic~Topology} \\ {\rm Assignment}~\#~{\rm NUM} \end{array}$

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Note. My order of path concatenation follows Hatcher,

$$\gamma * \delta(x) = \begin{cases} \gamma(2x) & x \le \frac{1}{2} \\ \delta(2x - 1) & x \ge \frac{1}{2} \end{cases}$$

Problem 1.

Problem 2.

Problem 3.

Problem 4.

Problem 5.

Problem 6.

Problem 7.

Problem 8.

Problem 9.

Problem 10.