

$$\sigma_1 \sigma_2 \sigma_1 = \text{Diagram 1} = \text{Diagram 2} = \sigma_2 \sigma_1 \sigma_2$$

The image illustrates the braid relation for the generators σ_1 and σ_2 of the braid group. It shows that the product $\sigma_1 \sigma_2 \sigma_1$ is equal to $\sigma_2 \sigma_1 \sigma_2$, represented by two equivalent braid diagrams.

Diagram 1 (Left): A braid with three strands. The left two strands cross each other twice (forming a full twist), and then the right strand crosses between them. This represents the expression $\sigma_1 \sigma_2 \sigma_1$.

Diagram 2 (Right): A braid with three strands. The right two strands cross each other twice (forming a full twist), and then the left strand crosses between them. This represents the expression $\sigma_2 \sigma_1 \sigma_2$.