The geometric product of three multivectors in 2D can be written as:
$(a_0 + a_1 e_1)(b_0 + b_1 e_1)(c_0 + c_1 e_1)$
Expanding this product using the distributive property and the rules of the geometric product yields:
$(a_0 b_0 c_0) + (a_0 b_1 c_1 - a_0 b_0 c_1 - a_0 b_1 c_0 + a_1 b_0 c_1 + a_1 b_1 c_0 - a_1 b_0 c_0) e_1$
where a_0, b_0, c_0 are scalars, and a_1, b_1, c_1 are the bivectors (2-blades) representing the oriented area spanned by the vectors a, b, and c, respectively.