1 | **inner product def**

2 | **motivation**

2.1 | **The norm of a complex number $\|z\|$ should be non-negative, so we can define it as**

$$\|z\| = \sqrt{|z_1|^2 + \cdots + |z_n|^2}$$

Since the square of the absolute value is just a complex number times a conjugate,