

$$14) \quad ||p| - |q|| \leq |p - q|$$

$$(|p| - |q|)^2 \leq (|p - q|)^2$$

$$|p|^2 - 2|p||q| + |q|^2 \leq |p|^2 - 2p \cdot q + |q|^2$$

$$-2|p||q| \leq -2p \cdot q$$

$$\underline{|p||q| \geq p \cdot q} \rightarrow \text{Cauchy-Schwarz Inequality}$$