

MA511 HW32 Sol.

#5.5.2

Sol.

(a) $x + \bar{x} = 2a$ is real

(b) $e^{-i\theta}$ is on the unit circle

(c) $e^{i\theta} \cdot e^{i\varphi} = e^{i(\theta+\varphi)}$ is also on the unit circle

(d) $|e^{i\theta} + e^{i\varphi}| \leq 1 + 1$ is on or inside the circle of radius 2

#5.5.6

Sol. From $\sqrt{4+16+16} = 6$

$$\|x\| = \|y\| = 6$$

$$x^H y = 4 + 16i$$