

EX: Find the value (in polar form) of $(3e^{j40^\circ})^3$.

ANS: $27e^{j120^\circ}$

SOL'N: We take the power inside the parentheses and use the identity

$$(ab)^n = a^n b^n$$

giving the answer:

$$3^3 e^{j3 \cdot 40^\circ} = 27e^{j120^\circ}$$