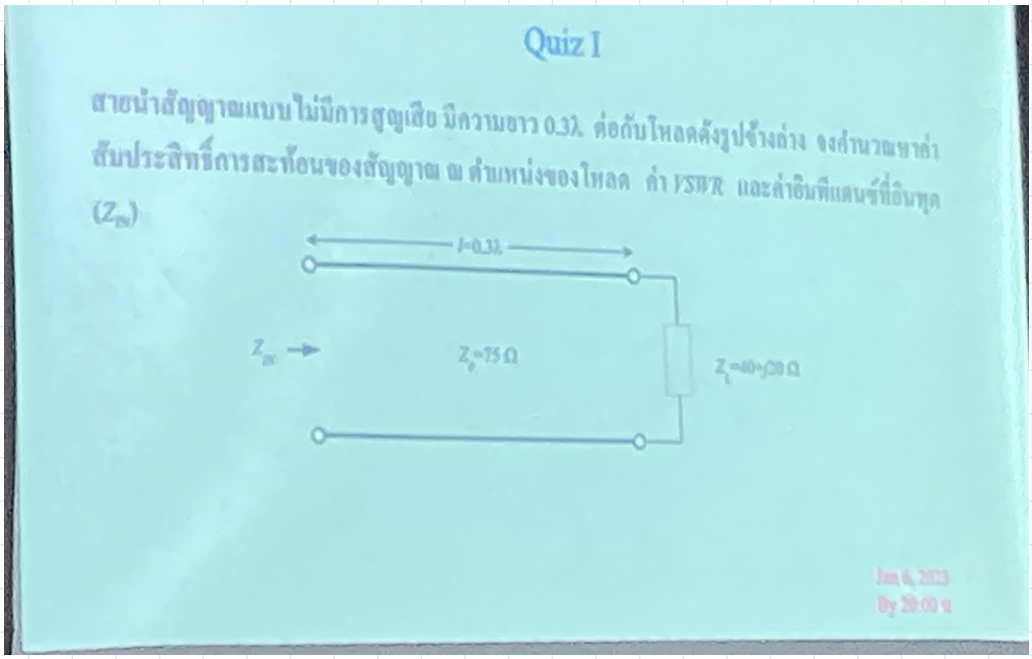

$Z_L = 40+j20$, $Z_0 = 75\,\Omega$ Find Z_{in}, VSWR, Γ

From $$Z_{in} = Z_0 \frac{Z_L + jZ_0\tan(\beta l)}{Z_0 + jZ_L\tan(\beta l)}$$

; $$Z_{in} = 75 \cdot \frac{(40+j20) + j(75)\tan(0.6\pi)}{75 + j(40+j20)\tan(0.6\pi)}$$

$$\therefore \quad Z_{in} = 69.706 - j52.95$$

From $$\Gamma = \frac{Z_L - Z_0}{Z_L + Z_0}$$

; $$\Gamma = \frac{40+j20-75}{40+j20+75}$$

$$\therefore \quad \Gamma = -0.266 + j0.22$$

and $$VSWR = \frac{1+|\Gamma|}{1-|\Gamma|}$$

$$= \frac{1+\sqrt{(-0.266)^2+0.22^2}}{1-\sqrt{(-0.266)^2+0.22^2}}$$

$$\therefore \quad VSWR = 2.054$$

Hence, Input Impedance is $69.706 - j52.95$, Reflection Coefficient is $-0.266 + j0.22$ and VSWR is 2.054 ※