

Problem 2.47 Use the Smith chart to find the reflection coefficient corresponding to a load impedance of

- (a) $Z_L = 3Z_0$
- (b) $Z_L = (2 - j2)Z_0$
- (c) $Z_L = -j2Z_0$
- (d) $Z_L = 0$ (short circuit)

Solution: Refer to Fig. P2.47.

- (a) Point *A* is $z_L = 3 + j0$. $\Gamma = 0.5e^{0^\circ}$
- (b) Point *B* is $z_L = 2 - j2$. $\Gamma = 0.62e^{-29.7^\circ}$
- (c) Point *C* is $z_L = 0 - j2$. $\Gamma = 1.0e^{-53.1^\circ}$
- (d) Point *D* is $z_L = 0 + j0$. $\Gamma = 1.0e^{180.0^\circ}$

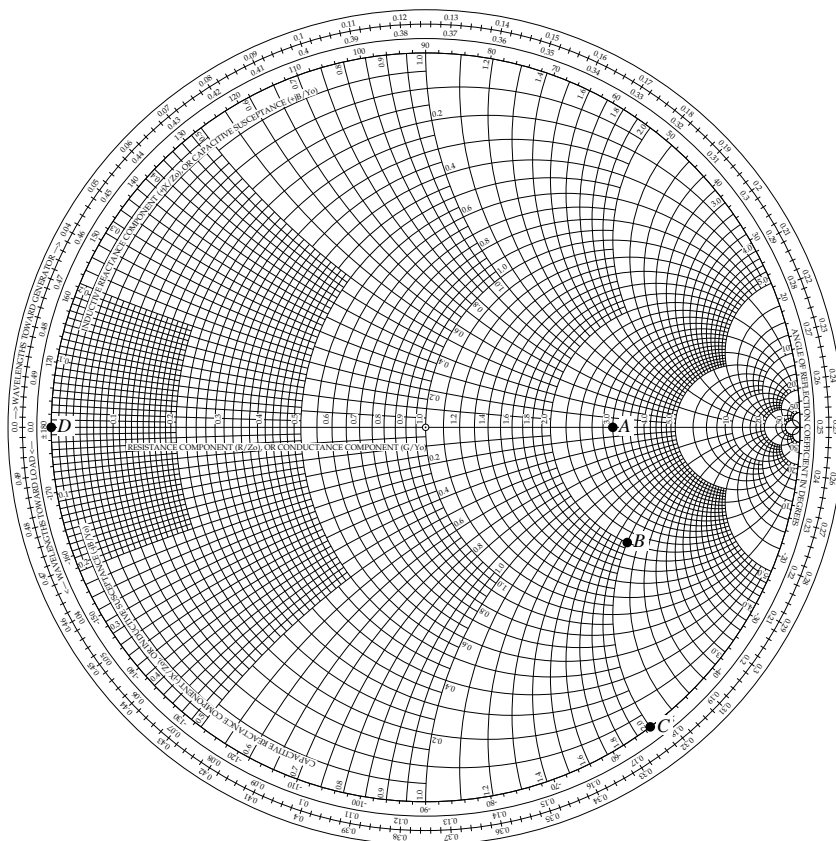


Figure P2.47: Solution of Problem 2.47.