$Z = r \angle A \qquad W = q \angle B$

$$ZW = r \times q \angle (A+B)$$

$$\frac{Z}{W} = \frac{r}{q} \angle (A-B)$$

$(-1.2 + j)(-5 + j1.3)$

Soln,

$-1.2 + j = 1.56 \angle 140.19°$

$-5 + j1.3 = 5.17 \angle 165.43°$

$\times \qquad = (1.56 \times 5.17) \angle 140.19° + 165.43°$

$= 8.07 \angle 305.62°$

$V = 7.6 - j\,6.8 = 10.20 \angle -41.82°$

$Z = 88 + j.5 = 88.14 \angle 3.25°$

Find $i = \frac{V}{Z} = \frac{10.20}{88.14} \angle (-41.82° - 3.25°)$

$= 0.12 \angle -45.07°$

Find the exact rect form of

$$\frac{1}{\sqrt{2}} \angle\left(\frac{\pi}{4}\right) =$$

Soln:

$$r\angle\theta = r\cos(\theta) + j\, r\sin(\theta)$$

$$\frac{1}{\sqrt{2}} \angle\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}}\cos\left(\frac{\pi}{4}\right) + j\frac{1}{\sqrt{2}}\sin\left(\frac{\pi}{4}\right)$$

$$= \frac{1}{\sqrt{2}}\left[\frac{1}{\sqrt{2}} + j\frac{1}{\sqrt{2}}\right]$$

$$= \frac{1}{\sqrt{2}\sqrt{2}}\left[1 + j\right]$$

$$= \frac{1}{2}\left[1 + j\right]$$