

$$\theta(\omega) = \frac{\omega}{\omega^2 - 1}$$

$$\omega = \sum_{n=1}^{\infty} (\omega^n)$$

$$= \frac{\omega}{1 - \omega}$$

$$= \frac{\omega}{1 - \omega} = \frac{\omega}{1 - \omega}$$

$$\therefore \omega = \sum_{n=1}^{\infty} (\omega^n) = \omega + \omega^2 + \omega^3 + \dots$$

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$$\theta(\omega) = \frac{\omega}{\omega^2 - 1} = \frac{\omega}{\omega^2 - 1} = \frac{\omega}{\omega^2 - 1}$$

$$\omega = \sum_{n=1}^{\infty} \omega^n = \omega + \omega^2 + \omega^3 + \omega^4 + \dots$$

$$= \omega + \omega^2 + \omega^3 + \omega^4 + \dots$$

$$= \omega \left[ 1 + (\omega + \omega^2) + (\omega^2 + \omega^3) \right]$$

$$= \omega \left( 1 + \omega + \omega^2 \right) = \omega \theta(\omega)$$

$$\omega = \omega + \omega^2 + \omega^3 \quad \theta(\omega) = \frac{\omega}{\omega^2 - 1}$$

$$\theta(\omega) = \frac{\omega}{\omega^2 - 1}$$

$$\omega = \sum_{n=1}^{\infty} \left( \frac{\omega}{\omega^2 - 1} \right)^n$$

$$= \frac{\omega}{\omega^2 - 1} + \frac{\omega^2}{(\omega^2 - 1)^2} + \dots$$

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$$\therefore \omega = \sum_{n=1}^{\infty} \left( \frac{\omega}{\omega^2 - 1} \right)^n = \frac{\omega}{\omega^2 - 1} + \frac{\omega^2}{(\omega^2 - 1)^2} + \dots$$

$$\theta(\omega) = \frac{\omega}{\omega^2 - 1} = \frac{\omega}{\omega^2 - 1} = \frac{\omega}{\omega^2 - 1}$$

$$\omega = \sum_{n=1}^{\infty} \left( \frac{\omega}{\omega^2 - 1} \right)^n = \frac{\omega}{\omega^2 - 1} + \frac{\omega^2}{(\omega^2 - 1)^2} + \frac{\omega^3}{(\omega^2 - 1)^3} + \dots$$

$$= \frac{\omega}{\omega^2 - 1} \left[ 1 + \frac{\omega}{\omega^2 - 1} + \left( \frac{\omega}{\omega^2 - 1} \right)^2 + \dots \right]$$

$$= \frac{\omega}{\omega^2 - 1} \left[ \frac{1}{1 - \frac{\omega}{\omega^2 - 1}} \right] = \frac{\omega}{\omega^2 - 1} \cdot \frac{\omega^2 - 1}{\omega^2 - 1 - \omega} = \frac{\omega}{\omega^2 - 1 - \omega}$$

$$\omega = \frac{\omega}{\omega^2 - 1 - \omega} \quad \theta(\omega) = \frac{\omega}{\omega^2 - 1 - \omega}$$

$$\theta(\omega) = \frac{\pi}{\omega}$$

$$\omega = \sum_{n=1}^{\infty} \theta(\omega) = \frac{\pi}{\omega}$$

$$= \frac{\pi}{\omega} = \frac{\pi}{\omega}$$

$$\therefore \omega = \sum_{n=1}^{\infty} \theta(\omega) = \omega + \omega$$

$$\theta(\omega) = \frac{\pi}{\omega} = \frac{\pi}{\omega} = \frac{\pi}{\omega}$$

$$\begin{aligned} \omega &= \sum_{n=1}^{\infty} \theta(\omega) = \omega + \omega + \omega + \dots \\ &= \omega + \omega + \omega + \dots \\ &= \omega \left[ (\omega + \omega) + (\omega + \omega) \right] \\ &= \omega \left( \omega + \omega \right) = \omega \frac{\pi}{\omega} \left( \omega + \omega \right) \\ &= \omega \theta(\omega) \end{aligned}$$

$$\omega = \omega + \omega \theta(\omega) = \frac{\pi}{\omega} \omega$$

