

Α' ΟΜΑΔΑΣ

1. Αν $\eta\mu x = \frac{3}{5}$ και $\frac{\pi}{2} < x < \pi$, να βρείτε τους άλλους τριγωνομετρικούς αριθμούς της γωνίας x rad.

$$\sigma\omega^2 x + \eta\mu^2 x = 1 \Leftrightarrow$$

$$\sigma\omega^2 x + \left(\frac{3}{5}\right)^2 = 1 \Leftrightarrow$$

$$\sigma\omega^2 x = 1 - \frac{9}{25} \Leftrightarrow$$

$$\sigma\omega^2 x = \frac{25}{25} - \frac{9}{25} \Leftrightarrow$$

$$\sigma\omega^2 x = \frac{16}{25} \xrightarrow{\sqrt{\frac{1}{2} \times \frac{1}{25}}} \sigma\omega x = -\frac{4}{5}$$

$$\xi\phi x = \frac{\eta\mu x}{\sigma\omega x} = \frac{\frac{3}{5}}{-\frac{4}{5}} = -\frac{3}{4}$$

$$\sigma\phi x = -\frac{4}{3}$$

2. Αν $\sin x = -\frac{2}{3}$ και $\pi < x < \frac{3\pi}{2}$, να βρείτε τους άλλους τριγωνομετρικούς αριθμούς της γωνίας x rad.

$$\eta\mu^2 x + \sigma\omega^2 x = 1 \Leftrightarrow$$

$$\eta\mu^2 x + \left(-\frac{2}{3}\right)^2 = 1 \Leftrightarrow$$

$$\eta\mu^2 x + \frac{4}{9} = 1 \Leftrightarrow$$

$$\eta\mu^2 x = \frac{9}{9} - \frac{4}{9} \Leftrightarrow$$

$$\eta\mu^2 x = \frac{5}{9} \xleftrightarrow{\pi < x < \frac{3\pi}{2}} \eta\mu x = -\frac{\sqrt{5}}{3}$$

$$\epsilon\phi x = \frac{\eta\mu x}{\sigma\omega x} = \frac{-\frac{\sqrt{5}}{3}}{-\frac{2}{3}} = \frac{\sqrt{5}}{2}$$

$$\sigma\phi x = \frac{2}{\sqrt{5}} = \frac{2 \cdot \sqrt{5}}{\sqrt{5} \cdot \sqrt{5}} = \frac{2\sqrt{5}}{5}$$

3. Αν $\varepsilon\phi x = -\frac{\sqrt{3}}{3}$ και $\frac{3\pi}{2} < x < 2\pi$, να βρείτε τους άλλους τριγωνομετρικούς αριθμούς της γωνίας x rad.

$$\sigma\omega^2 x = \frac{1}{1 + \varepsilon\phi^2 x}$$

$$\left(\varepsilon\phi^2 x = \left(-\frac{\sqrt{3}}{3} \right)^2 = \frac{3}{9} = \frac{1}{3} \right)$$

$$\sigma\omega^2 x = \frac{1}{1 + \frac{1}{3}} = \frac{1}{\frac{4}{3}} = \frac{3}{4}$$

$$\sigma\omega x = \frac{\sqrt{3}}{2}$$

$$\eta\mu^2 x = \frac{\varepsilon\phi^2 x}{1 + \varepsilon\phi^2 x} = \frac{\frac{1}{3}}{1 + \frac{1}{3}} = \frac{\frac{1}{3}}{\frac{4}{3}} = \frac{1}{4}$$

$$\eta\mu x = -\frac{1}{2}$$

$$\sigma\phi x = \frac{1}{\varepsilon\phi x} = -\frac{3}{\sqrt{3}} = -\sqrt{3}$$

4. Αν $\sigma\phi x = \frac{2\sqrt{5}}{5}$ και $0 < x < \frac{\pi}{2}$, να βρείτε τους άλλους τριγωνομετρικούς αριθμούς της γωνίας x rad.

$$\epsilon\phi x = \frac{5}{2\sqrt{5}} = \frac{\sqrt{5}}{2}, \quad \epsilon\phi^2 x = \frac{5}{4}$$

$$\sigma\omega^2 x = \frac{1}{1 + \epsilon\phi^2 x} = \frac{1}{1 + \frac{5}{4}} = \frac{1}{\frac{9}{4}} = \frac{4}{9}$$

$$\sigma\omega x = \frac{2}{3}$$

$$\eta\mu^2 x = \frac{\epsilon\phi^2 x}{1 + \epsilon\phi^2 x} = \frac{\frac{5}{4}}{1 + \frac{5}{4}} = \frac{\frac{5}{4}}{\frac{9}{4}} = \frac{5}{9}$$

$$\eta\mu x = \frac{\sqrt{5}}{3}$$