

ΘΕΜΑ

Να υπολογίσετε την παράσταση: $A = \frac{\eta\mu 300^\circ \cdot \sigma\upsilon\nu 405^\circ \cdot \epsilon\varphi 930^\circ}{\sqrt{3} \cdot \eta\mu \frac{19\pi}{4} \cdot \sigma\upsilon\nu \frac{22\pi}{3} \cdot \sigma\varphi \frac{35\pi}{3}}$

$$\cdot \eta\mu 300^\circ = \eta\mu (360^\circ - 60^\circ) = \eta\mu (-60^\circ) = -\eta\mu 60^\circ = \left(-\frac{\sqrt{3}}{2}\right)$$

$$\cdot \sigma\omega 405^\circ = \sigma\omega (360^\circ + 45^\circ) = \sigma\omega 45^\circ = \left(\frac{\sqrt{2}}{2}\right)$$

$$\cdot \epsilon\varphi 930^\circ = \epsilon\varphi (720^\circ + 210^\circ) = \epsilon\varphi (2 \cdot 360^\circ + 210^\circ) = \epsilon\varphi 210^\circ = \\ = \epsilon\varphi (180^\circ + 30^\circ) = \epsilon\varphi 30^\circ = \left(\frac{\sqrt{3}}{3}\right)$$

$$\cdot \eta\mu \frac{19\pi}{4} = \eta\mu \frac{16\pi + 3\pi}{4} = \eta\mu \left(\frac{16\pi}{4} + \frac{3\pi}{4}\right) = \eta\mu \left(4\pi + \frac{3\pi}{4}\right) = \eta\mu \left(\frac{3\pi}{4}\right) = \\ = \eta\mu \left(\pi - \frac{\pi}{4}\right) = \eta\mu \frac{\pi}{4} = \left(\frac{\sqrt{2}}{2}\right)$$

$$\cdot \sigma\omega \frac{22\pi}{3} = \sigma\omega \left(\frac{21\pi + \pi}{3}\right) = \sigma\omega \left(\frac{21\pi}{3} + \frac{\pi}{3}\right) = \sigma\omega \left(7\pi + \frac{\pi}{3}\right) = \sigma\omega \left(\pi + \frac{\pi}{3}\right) = \\ = \sigma\omega \left(\pi + \frac{\pi}{3}\right) = -\sigma\omega \frac{\pi}{3} = \left(-\frac{1}{2}\right)$$

$$\cdot \sigma\varphi \frac{35\pi}{3} = \sigma\varphi \left(\frac{36\pi - \pi}{3}\right) = \sigma\varphi \left(\frac{36\pi}{3} - \frac{\pi}{3}\right) = \sigma\varphi \left(12\pi - \frac{\pi}{3}\right) = \\ \sigma\varphi \left(-\frac{\pi}{3}\right) = -\sigma\varphi \frac{\pi}{3} = \left(-\frac{\sqrt{3}}{3}\right)$$

ΑΡΑ

$$A = \frac{\eta\mu 300^\circ \cdot \sigma\omega 405^\circ \cdot \epsilon\varphi 930^\circ}{\sqrt{3} \cdot \eta\mu \frac{19\pi}{4} \cdot \sigma\omega \frac{22\pi}{3} \cdot \sigma\varphi \frac{35\pi}{3}} = \frac{-\frac{\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{3}}{\sqrt{3} \cdot \frac{\sqrt{2}}{2} \cdot \left(-\frac{1}{2}\right) \cdot \left(-\frac{\sqrt{3}}{3}\right)} = \\ = -\frac{\frac{\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{3}}{\sqrt{3} \cdot \frac{\sqrt{2}}{2} \cdot \frac{1}{2} \cdot \frac{\sqrt{3}}{3}} = \left(-1\right)$$

ΘΕΜΑ

Να υπολογίσετε την παράσταση: $A = \frac{\eta\mu \frac{17\pi}{3} \cdot \sigma\upsilon\nu \frac{25\pi}{4} \cdot \epsilon\varphi \frac{31\pi}{6}}{\sqrt{3} \cdot \eta\mu 495^\circ \cdot \sigma\upsilon\nu 960^\circ \cdot \sigma\varphi 1380^\circ}$

$$\cdot \eta\mu \frac{17\pi}{3} = \eta\mu \left(\frac{18\pi - \pi}{3} \right) = \eta\mu \left(\frac{18\pi}{3} - \frac{\pi}{3} \right) = \eta\mu \left(6\pi - \frac{\pi}{3} \right) =$$

$$\eta\mu \left(-\frac{\pi}{3} \right) = -\eta\mu \frac{\pi}{3} = \left(-\frac{\sqrt{3}}{2} \right)$$

$$\cdot \sigma\omega \frac{25\pi}{4} = \sigma\omega \left(\frac{24\pi + \pi}{4} \right) = \sigma\omega \left(\frac{24\pi}{4} + \frac{\pi}{4} \right) = \sigma\omega \left(6\pi + \frac{\pi}{4} \right) =$$

$$\sigma\omega \frac{\pi}{4} = \left(\frac{\sqrt{2}}{2} \right)$$

$$\cdot \epsilon\varphi \frac{31\pi}{6} = \epsilon\varphi \left(\frac{30\pi + \pi}{6} \right) = \epsilon\varphi \left(\frac{30\pi}{6} + \frac{\pi}{6} \right) = \epsilon\varphi \left(5\pi + \frac{\pi}{6} \right) =$$

$$\epsilon\varphi \left(\pi + \frac{\pi}{6} \right) = \epsilon\varphi \frac{\pi}{6} = \left(\frac{\sqrt{3}}{3} \right)$$

$$\cdot \eta\mu 495^\circ = \eta\mu (360^\circ + 135^\circ) = \eta\mu (135^\circ) = \eta\mu (180^\circ - 45^\circ) =$$

$$= \eta\mu 45^\circ = \left(\frac{\sqrt{2}}{2} \right)$$

$$\cdot \sigma\omega 960^\circ = \sigma\omega (720^\circ + 240^\circ) = \sigma\omega (2 \cdot 360^\circ + 240^\circ) = \sigma\omega (240^\circ) =$$

$$= \sigma\omega (180^\circ + 60^\circ) = -\sigma\omega 60^\circ = \left(-\frac{1}{2} \right)$$

$$\cdot \sigma\varphi 1380^\circ = \sigma\varphi (1440^\circ - 60^\circ) = \sigma\varphi (4 \cdot 360^\circ - 60^\circ) = -\sigma\varphi 60^\circ = \left(-\frac{\sqrt{3}}{3} \right)$$

$$A = \frac{\overset{APR}{\eta\mu \frac{17\pi}{3} \cdot \sigma\omega \frac{25\pi}{4} \cdot \epsilon\varphi \frac{31\pi}{6}}}{\sqrt{3} \cdot \eta\mu 495^\circ \cdot \sigma\omega 960^\circ \cdot \sigma\varphi 1380^\circ} = \frac{\left(-\frac{\sqrt{3}}{2} \right) \cdot \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{3}}{\sqrt{3} \cdot \frac{\sqrt{2}}{2} \cdot \left(-\frac{1}{2} \right) \cdot \left(-\frac{\sqrt{3}}{3} \right)} =$$

$$= \frac{-\frac{\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{3}}{\sqrt{3} \cdot \frac{\sqrt{2}}{2} \cdot \frac{1}{2} \cdot \frac{\sqrt{3}}{3}} = \left(-1 \right)$$