

Giải bài 6 trang 156 sgk toán Đại Số lớp 10

Đề bài:

Không sử dụng máy tính, hãy tính

$$a) \sin 75^0 + \cos 75^0 = \frac{\sqrt{6}}{2}$$

$$b) \tan 267^0 + \tan 93^0 = 0$$

$$c) \sin 65^0 + \sin 55^0 = \sqrt{3} \cos 5^0$$

$$d) \cos 12^0 - \cos 48^0 = \sin 18^0$$

Đáp án

$$\begin{aligned} a) & \sin 75^0 + \cos 75^0 \\ &= \sin(45^0 + 30^0) + \cos(45^0 + 30^0) \\ &= \sin 45^0 \cdot \cos 30^0 + \cos 45^0 \cdot \sin 30^0 + \cos 45^0 \cdot \cos 30^0 - \sin 45^0 \cdot \sin 30^0 \\ &= \frac{\sqrt{2}}{2} (\cos 30^0 + \sin 30^0 + \cos 30^0 - \sin 30^0) \\ &= \frac{\sqrt{2}}{2} \cdot 2 \frac{\sqrt{3}}{2} = \frac{\sqrt{6}}{2} \end{aligned}$$

$$\begin{aligned} b) & \tan 267^0 + \tan 93^0 \\ &= \tan(267^0 - 360^0) + \tan 93^0 \\ &= \tan(-93^0) + \tan 93^0 = 0 \end{aligned}$$

$$\begin{aligned}
 c) \quad & \sin 65^\circ + \sin 55^\circ \\
 &= 2 \sin \frac{65^\circ + 55^\circ}{2} \cos \frac{65^\circ - 55^\circ}{2} \\
 &= 2 \sin 60^\circ \cos 5^\circ = \sqrt{3} \cos 5^\circ
 \end{aligned}$$

$$\begin{aligned}
 d) \quad & \cos 12^\circ - \cos 48^\circ \\
 &= -2 \sin \frac{12^\circ + 48^\circ}{2} \sin \frac{12^\circ - 48^\circ}{2} \\
 &= -2 \sin 30^\circ \sin(-18^\circ) \\
 &= 2 \sin 30^\circ \sin 18^\circ = 2 \cdot \frac{1}{2} \sin 18^\circ \\
 &= \sin 18^\circ.
 \end{aligned}$$