VALORILE FUNCȚIILOR TRIGONOMETRICE INVERSE

Calculați:

1) $\sin\left(\frac{\pi}{2} - \arcsin\frac{3}{5}\right)$

2) $\operatorname{tg}\left(\frac{\pi}{4} - \operatorname{arctg}\frac{1}{2}\right)$

Rezolvați:

1) $\arcsin x + \arccos\frac{1}{\sqrt{2}} = \frac{\pi}{2}$

Prof. Ovidiu Bădescu

$$\sin\left(\frac{\pi}{2} - \arcsin\frac{3}{5}\right) = ?$$

$E_1)$ $\sin\left(\frac{\pi}{2} - x\right) = \cos x$

$E_2)$ $\cos(\arcsin x) = \sqrt{1-x^2}$

$\cos(\arccos x) = x$

$\sin(\arccos x) = \sqrt{1-x^2}$

$\sin(\arcsin x) = x$

$E_3)$ $\sin\left(\frac{\pi}{2} - \arcsin\frac{3}{5}\right) = \cos\left(\arcsin\frac{3}{5}\right)$

$= \sqrt{1-\left(\frac{3}{5}\right)^2} = \sqrt{\frac{25-9}{25}} = \frac{4}{5}$

Prof. Ovidiu Bădescu

Calculați: $\operatorname{tg}\left(\frac{\pi}{4} - \operatorname{arctg}\frac{1}{2}\right)$

E1) $\operatorname{tg}(a-b) = \dfrac{\operatorname{tg}a - \operatorname{tg}b}{1+\operatorname{tg}a\operatorname{tg}b}$

$$\Rightarrow N = \frac{\operatorname{tg}\frac{\pi}{4} - \operatorname{tg}\left(\operatorname{arctg}\frac{1}{2}\right)}{1+\operatorname{tg}\frac{\pi}{4}\operatorname{tg}\left(\operatorname{arctg}\frac{1}{2}\right)}$$

E2) Dar, $\operatorname{tg}\frac{\pi}{4} = \operatorname{tg}45^\circ = 1$

$\operatorname{tg}(\operatorname{arctg}x) = x \Rightarrow \operatorname{tg}\left(\operatorname{arctg}\frac{1}{2}\right) = \frac{1}{2}$

E3) $N = \dfrac{1-\frac{1}{2}}{1+1\cdot\frac{1}{2}} = \dfrac{\frac{2-1}{2}}{\frac{2+1}{2}} = \frac{1}{2}\cdot\frac{2}{3} = \frac{1}{3}$

Prof. Ovidiu Badescu

Rezolvați: $\arcsin x + \arccos \frac{1}{\sqrt{2}} = \frac{\pi}{2}$

$E_1)$ $\arccos \frac{1}{\sqrt{2}} = \arccos \frac{\sqrt{2}}{2} = \frac{\pi}{4}$ pt că $\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$

$E_2)$ ec $\Leftrightarrow$ $\arcsin x + \frac{\pi}{4} = \frac{\pi}{2}$

$$\arcsin x = \frac{2\pi}{2} - \frac{\pi}{4} = \frac{\pi}{4}$$

$E_3)$ $\arcsin x = \frac{\pi}{4} \Rightarrow x = \sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$

Prof. Ovidiu Bădescu