25/10/2018

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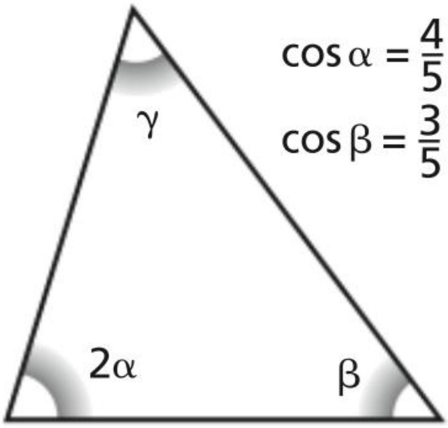


$\cos\alpha = \frac{4}{5}$

$\cos\beta = \frac{3}{5}$

Calcola sin γ e cos γ.

$\left[\frac{4}{5}; \frac{3}{5}\right]$

$$\sin\gamma = \sin(\pi - (2\alpha+\beta)) = \sin(2\alpha+\beta) =$$

$$= \sin 2\alpha \cos\beta + \cos 2\alpha \sin\beta =$$

$$= 2\sin\alpha\cos\alpha \cdot \cos\beta + (2\cos^2\alpha - 1)\sin\beta =$$

$$= 2\sqrt{1-\cos^2\alpha} \cdot \cos\alpha \cdot \cos\beta + (2\cos^2\alpha - 1)\sqrt{1-\cos^2\beta} =$$

$$= 2\sqrt{1-\frac{16}{25}} \cdot \frac{4}{5} \cdot \frac{3}{5} + \left(2 \cdot \frac{16}{25} - 1\right)\sqrt{1-\frac{9}{25}} =$$

$$= 2 \cdot \frac{3}{5} \cdot \frac{4}{5} \cdot \frac{3}{5} + \frac{7}{25} \cdot \frac{4}{5} = \frac{72+28}{125} = \frac{100}{125} = \boxed{\frac{4}{5}}$$

$$\cos\gamma = \sqrt{1-\sin^2\gamma} = \sqrt{1-\frac{16}{25}} = \boxed{\frac{3}{5}}$$

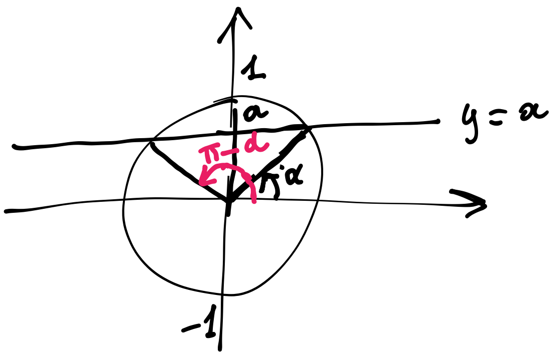
EQ. GONIOMETRICHE ELEMENTARI

$$\boxed{\sin x = a}$$

- $a < -1 \lor a > 1$ $\Longrightarrow$ EQ. IMPOSSIBILE
  $(|a| > 1)$

- $-1 \leq a \leq 1$ $\Longrightarrow$ EQ. DETERMINATA
  $(|a| \leq 1)$

Una soluzione è $\arcsin(a)$. È l'unica?



C'è anche
$\arcsin(a) + 2k\pi$
Ce ne sono altre?
Sì, c'è anche
$\pi - \arcsin(a) + 2k\pi$

IN DEFINITIVA

$\alpha = \arcsin(a)$

$$\boxed{x = \alpha + 2k\pi \quad \lor \quad x = (\pi - \alpha) + 2k\pi}$$