



COGNOME _____ NOME _____

Calcola il valore delle seguenti espressioni:

1. $\sqrt{3} \operatorname{sen} \frac{\pi}{3} - \sqrt{3} \operatorname{tg} \frac{\pi}{3} - \operatorname{sen} \frac{\pi}{6} + \sec \frac{\pi}{6} \operatorname{sen} \frac{\pi}{3} + \sec \pi - 8 \cos \frac{\pi}{3}$ _____ / 2,5

2. $\sqrt{3} a \sec \frac{\pi}{6} - \frac{b}{2} \operatorname{ctg} \frac{\pi}{4} + a \cos \pi - \sqrt{3} b \operatorname{sen} \frac{\pi}{3} + 2b$ _____ / 1,5

3. $2 \cos 300^\circ - \frac{3}{\sqrt{3}} \operatorname{tg} 210^\circ - \operatorname{sen} 405^\circ - \cos 780^\circ$ _____ / 1,5

4. $4 \operatorname{sen} \frac{5}{6} \pi \cdot \cos \frac{7}{6} \pi - 2 \cos \frac{5}{6} \pi + 3 \operatorname{tg} \frac{3}{4} \pi + \operatorname{sen} \frac{7}{2} \pi$ _____ / 2

5. $2 \operatorname{sen} \frac{7}{4} \pi \cdot \cos \frac{5}{4} \pi - \frac{3}{\sqrt{3}} \operatorname{ctg} \frac{11}{6} \pi + \operatorname{sen} \frac{7}{6} \pi + \frac{\sqrt{2}}{2} \cos \frac{9}{4} \pi$ _____ / 2

Verifica la seguente identità:

6. $\frac{\cos \frac{4}{3} \pi \left(\operatorname{tg} \frac{5}{4} \pi - \operatorname{ctg} \frac{7}{6} \pi \right)}{-\operatorname{sen} \frac{4}{3} \pi + \cos \frac{11}{6} \pi} = \frac{1}{2} \operatorname{ctg} \frac{2}{3} \pi + \frac{1}{2}$ _____ / 3

Ricorda che $\sec \alpha = \frac{1}{\cos \alpha}$ e $\operatorname{cosec} \alpha = \frac{1}{\operatorname{sen} \alpha}$



Semplifica le seguenti espressioni:

7. $\operatorname{sen}(-\alpha) + \operatorname{sen}\left(\frac{\pi}{2} - \alpha\right) + \cos(\pi + \alpha) - \cos(\pi - \alpha)$ _____ / 1,5

8. $\frac{(a^2 - b^2) \operatorname{ctg}(\pi - \alpha)}{\operatorname{tg}\left(\frac{\pi}{2} - \alpha\right)} - \frac{(a^2 + b^2) \operatorname{tg}\left(\frac{\pi}{2} - \alpha\right)}{\operatorname{ctg}(2\pi - \alpha)}$ _____ / 2

9. $\frac{\cos(4\pi - \alpha)}{\operatorname{sen}\left(\frac{\pi}{2} + \alpha\right)} \cdot \frac{1}{\cos\left(\frac{3}{2}\pi - \alpha\right) \cdot \cos\left(\alpha + \frac{\pi}{2}\right)} + \frac{\operatorname{tg}\left(\alpha + \frac{3}{2}\pi\right) \cdot \operatorname{ctg}(2\pi - \alpha)}{\cos(\pi - \alpha) \cdot \operatorname{sen}\left(\frac{3}{2}\pi - \alpha\right)}$ _____ / 3,5

10. $\frac{\operatorname{tg}\left(\frac{3}{2}\pi - \alpha\right) \frac{\cos\left(\frac{\pi}{2} - \alpha\right)}{\cos(\alpha - 8\pi)}}{[\cos(\pi - \alpha) \cos(-3\pi - \alpha) - \cos^2(\alpha - \pi) \cos \pi] + 2 \operatorname{sen}(\alpha - \pi) \cos\left(\frac{3}{2}\pi - \alpha\right)}$ _____ / 3,5

11. $\frac{\operatorname{sen}(450^\circ + \alpha) \cos(\alpha - 270^\circ) \cos(720^\circ - \alpha)}{\operatorname{tg}(\alpha + 180^\circ) \cos(540^\circ - \alpha)} + \operatorname{sen}^2(180^\circ - \alpha)$ _____ / 2,5

Ricorda che $\sec \alpha = \frac{1}{\cos \alpha}$ e $\operatorname{cosec} \alpha = \frac{1}{\operatorname{sen} \alpha}$