



CLASSE 3^A LICEO CLASSICO

14 Ottobre 2008

FORMULE GONIOMETRICHE

COGNOME _____ NOME _____

1. Applicando opportunamente le formule di addizione e sottrazione, calcola la seguente funzione goniometrica:

$$\cos \frac{17}{12} \pi$$

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2. Sapendo che: $\sin \alpha = \frac{3}{4}$, con $0 < \alpha < \frac{\pi}{2}$, calcola $\sin 2\alpha$.

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3. Sapendo che: $\sin \alpha = \frac{4}{5}$, con $0 < \alpha < \frac{\pi}{2}$, calcola seno e coseno di $\frac{\alpha}{2}$.

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Semplifica le seguenti espressioni:

4. $\operatorname{sen} \left(\frac{\pi}{3} - x \right) + \cos \left(\frac{\pi}{6} - x \right)$ _____ / 2,5

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5. $\cos 2\alpha - \operatorname{sen} 2\alpha \operatorname{ctg} \alpha$ _____ / 2

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6. $\frac{1 + \cos 2\alpha}{1 - \cos 2\alpha} \cdot \operatorname{tg} \alpha$ _____ / 2,5

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7. $\operatorname{tg} \frac{\alpha}{2} - 2 \frac{\operatorname{sen}^2 \frac{\alpha}{2}}{\operatorname{sen} \alpha}$ _____ / 2,5

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Verifica le seguenti identità:

8. $\cos \alpha \operatorname{sen} 2\alpha - \operatorname{sen} \alpha \cos 2\alpha = \cos \left(\frac{\pi}{2} - \alpha \right)$ _____ / 3

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9. $3 + \cos 2\alpha = 2 + 2\cos^2 \alpha$ _____ / 1

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10. $\operatorname{sen} 2\alpha \operatorname{tg} \alpha + \cos^2 \alpha = 2 - \cos 2\alpha - \operatorname{sen}^2 \alpha$ _____ / 3

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11. $\operatorname{sen}^2 \alpha - 2 \cos \alpha \operatorname{sen}^2 \frac{\alpha}{2} = \operatorname{sen} \alpha \operatorname{tg} \frac{\alpha}{2}$ _____ / 2

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12.
$$\frac{2 \cos^2 \frac{\alpha}{2} (1 - \cos \alpha)}{2 \cos^2 \frac{\alpha}{2} \cdot \text{sen } \alpha} = \frac{\text{sen } \alpha}{1 + \cos \alpha} \quad \underline{\hspace{2cm}} / 2$$

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13. Trasforma in $t = \text{tg } \frac{\alpha}{2}$ la seguente espressione:

$$\frac{\text{sen } \alpha + 2 \cos \alpha + 2}{\text{sen } \alpha}$$

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