ЭТО ТЕСТОВЫЙ ФАЙЛ

ДЛЯ ПРОВЕРКИ РАБОТЫ БОТА

ПРИМЕР ИСХОДНОГО ФАЙЛА

Докажите тождество (1.512—1.527):

1.512. a)
$$\frac{\sin \alpha + \cos (270^{\circ} + \alpha)}{2 \sin \frac{\alpha}{2} \cos \frac{\alpha}{2}} = 2; \ 6) \ \frac{2 (\cos^2 2\alpha - \sin^2 2\alpha)}{\cos 4\alpha - \sin (270^{\circ} - 4\alpha)} = 1.$$

1.513. a)
$$\sin\left(\frac{\pi}{6} + \alpha\right) + \sin\left(\frac{\pi}{6} - \alpha\right) = \cos\alpha;$$

6) $\cos\left(\frac{\pi}{6} + \alpha\right) - \cos\left(\frac{\pi}{6} - \alpha\right) = -\sin\alpha.$

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$$\cos\left(\frac{\pi}{6} + \alpha\right) - \cos\left(\frac{\pi}{6} - \alpha\right) = -\sin\alpha$$

1.514. a)
$$2\sin^2 \alpha + \cos 2\alpha = 1$$
; 6) $1 + \cos 2\alpha = 2\cos^2 \alpha$.
1.515. a) $(1 + \lg x)^2 - 2\lg x = \frac{1}{\cos^2 x}$;

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6)
$$(1 + \operatorname{ctg} x)^2 - \frac{1}{\sin^2 x} = 2 \operatorname{ctg} x$$
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1.516. a)
$$(\operatorname{tg} \alpha + \operatorname{ctg} \alpha) \cdot \sin 2\alpha = 2$$
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a)
$$(\lg \alpha + \operatorname{clg} \alpha) \cdot \sin 2\alpha = 2;$$

6) $(\operatorname{ctg} \alpha - \operatorname{tg} \alpha) \cdot \sin 2\alpha = 2\cos 2\alpha.$

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1.517. a) $\frac{\operatorname{tg} \alpha + 1}{\sin \alpha + \cos \alpha} = \frac{1}{\cos \alpha};$ 6) $\frac{\operatorname{ctg} \alpha - 1}{\cos \alpha - \sin \alpha} = \frac{1}{\sin \alpha}.$

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$$\frac{\cos^4 \alpha + \sin^2 \alpha \cos^2 \alpha}{\sin^2 \alpha} = \operatorname{ctg}^2 \alpha; \ 6) \ \frac{\sin^4 \alpha + \sin^2 \alpha \cos^2 \alpha}{\cos^2 \alpha} = \operatorname{tg}^2 \alpha.$$
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$$1 - \frac{\sin 2\alpha \sin \alpha}{2 \cos \alpha} = \cos^2 \alpha; \ 6) \ 1 - \frac{\sin 2\alpha \cos \alpha}{2 \sin \alpha} = \sin^2 \alpha.$$

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$$\frac{\cos\left(\frac{3\pi}{2} - \alpha\right) + \sin 2\alpha}{\sin\left(\frac{\pi}{2} - \alpha\right) - 0.5} = 2\sin\alpha;$$

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$$\frac{1+\lg \beta}{1+\lg \beta} = \lg \beta;$$

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$$\frac{\sin 3\alpha + \sin \alpha}{\cos 3\alpha + \cos \alpha} = \text{tg } 2\alpha;$$

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$$\frac{\sin{(\alpha-\beta)}+2\cos{\alpha}\sin{\beta}}{2\cos{\alpha}\cos{\beta}-\cos{(\alpha-\beta)}}=tg(\alpha+\beta);$$

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$$\sin(\alpha+\beta)+\sin(\alpha-\beta)=2\sin\alpha\cos\beta$$
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$$\frac{1-\cos\alpha}{\sin\alpha} = \operatorname{ctg}\left(\frac{\pi}{2} - \frac{\alpha}{2}\right)$$
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1.526. a) $\operatorname{tg} 2\alpha \cdot \frac{1-\operatorname{tg}^2\alpha}{2} = \sin 2\alpha$; 6) $\operatorname{ctg} 2\alpha \cdot \frac{2\operatorname{tg}\alpha}{2} = \cos 2\alpha$

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