

1 $(\cos \alpha \cdot \operatorname{tg} \alpha)^2 + (\sin \alpha \cdot \operatorname{ctg} \alpha)^2 = 1$

2 $(\cos \alpha \cdot \operatorname{tg} \alpha)^2 + (\sin \alpha \cdot \operatorname{ctg} \alpha)^2 =$

3 $= \left(\cos \alpha \cdot \frac{\sin \alpha}{\cos \alpha} \right)^2 + \left(\sin \alpha \cdot \frac{\cos \alpha}{\sin \alpha} \right)^2 =$

4 $= (\sin \alpha)^2 + (\cos \alpha)^2 =$

5 $= \sin^2 \alpha + \cos^2 \alpha = 1$ - мабуе тригонометр. 6 тангентасы

6 $\operatorname{ctg}^2 \alpha - \operatorname{tg}^2 \alpha = \frac{1}{\sin^2 \alpha} - \frac{1}{\cos^2 \alpha}$ $a^2 - b^2 = (a+b)(a-b)$

7 $\operatorname{ctg}^2 \alpha - \operatorname{tg}^2 \alpha = (\operatorname{ctg} \alpha + \operatorname{tg} \alpha) \cdot (\operatorname{ctg} \alpha - \operatorname{tg} \alpha) =$

8 $= \left(\frac{\overbrace{\cos \alpha}^{\cos} + \overbrace{\sin \alpha}^{\sin}}{\sin \alpha \cos \alpha} \right) \left(\frac{\overbrace{\cos \alpha}^{\cos}}{\sin \alpha} - \frac{\overbrace{\sin \alpha}^{\sin}}{\cos \alpha} \right) =$

9 $= \left(\frac{\cos^2 \alpha + \sin^2 \alpha}{\sin \alpha \cos \alpha} \right) \left(\frac{\cos^2 \alpha - \sin^2 \alpha}{\sin \alpha \cos \alpha} \right) =$

10 $= \left(\frac{1}{\sin \alpha \cos \alpha} \right) \left(\frac{\cos^2 \alpha - \sin^2 \alpha}{\sin \alpha \cos \alpha} \right) = \frac{\cos^2 \alpha - \sin^2 \alpha}{\sin^2 \alpha \cos^2 \alpha} =$

11 $= \frac{\cos^2 \alpha}{\sin^2 \alpha \cos^2 \alpha} - \frac{\sin^2 \alpha}{\sin^2 \alpha \cos^2 \alpha} = \frac{1}{\sin^2 \alpha} - \frac{1}{\cos^2 \alpha}$