

Osnovni trigonometrijski indetiteti

$$1) \sin^2 \alpha + \cos^2 \alpha = 1$$

$$2) \operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha}$$

$$3) \operatorname{ctg} \alpha = \frac{\cos \alpha}{\sin \alpha}$$

$$4) \operatorname{tg} \alpha \cdot \operatorname{ctg} \alpha = 1$$

Adicione formule

$$\sin(\alpha + \beta) = \sin \alpha \cos \beta + \cos \alpha \sin \beta$$

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

$$\operatorname{tg}(\alpha + \beta) = \frac{\operatorname{tg} \alpha + \operatorname{tg} \beta}{1 - \operatorname{tg} \alpha \cdot \operatorname{tg} \beta}$$

$$\operatorname{ctg}(\alpha + \beta) = \frac{\operatorname{ctg} \alpha \cdot \operatorname{ctg} \beta - 1}{\operatorname{ctg} \beta + \operatorname{ctg} \alpha}$$

$$5) \sin^2 \alpha = \frac{\operatorname{tg}^2 \alpha}{1 + \operatorname{tg}^2 \alpha}$$

$$6) \cos^2 \alpha = \frac{1}{1 + \operatorname{tg}^2 \alpha}$$

$$\sin(\alpha - \beta) = \sin \alpha \cos \beta - \cos \alpha \sin \beta$$

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

$$\operatorname{tg}(\alpha - \beta) = \frac{\operatorname{tg} \alpha - \operatorname{tg} \beta}{1 + \operatorname{tg} \alpha \cdot \operatorname{tg} \beta}$$

$$\operatorname{ctg}(\alpha - \beta) = \frac{\operatorname{ctg} \alpha \cdot \operatorname{ctg} \beta + 1}{\operatorname{ctg} \beta - \operatorname{ctg} \alpha}$$

Polovina ugla

$$1. \sin \frac{\alpha}{2} = \pm \sqrt{\frac{1 - \cos \alpha}{2}} \quad \text{ili} \quad 2 \sin^2 \frac{\alpha}{2} = 1 - \cos \alpha$$

$$2. \cos \frac{\alpha}{2} = \pm \sqrt{\frac{1 + \cos \alpha}{2}} \quad \text{ili} \quad 2 \cos^2 \frac{\alpha}{2} = 1 + \cos \alpha$$

$$3. \operatorname{tg} \frac{\alpha}{2} = \pm \sqrt{\frac{1 - \cos \alpha}{1 + \cos \alpha}}$$

$$4. \operatorname{ctg} \frac{\alpha}{2} = \pm \sqrt{\frac{1 + \cos \alpha}{1 - \cos \alpha}}$$

Dvostruki ugao

$$1. \sin 2\alpha = 2 \sin \alpha \cos \alpha$$

$$2. \cos 2\alpha = \cos^2 \alpha - \sin^2 \alpha$$

$$3. \operatorname{tg} 2\alpha = \frac{2 \operatorname{tg} \alpha}{1 - \operatorname{tg}^2 \alpha}$$

$$4. \operatorname{ctg} 2\alpha = \frac{\operatorname{ctg}^2 \alpha - 1}{2 \operatorname{ctg} \alpha}$$

Transformacije zbira i razlike u proizvod i obrnuto

$$1. \sin \alpha + \sin \beta = 2 \sin \frac{\alpha + \beta}{2} \cos \frac{\alpha - \beta}{2}$$

$$2. \sin \alpha - \sin \beta = 2 \cos \frac{\alpha + \beta}{2} \sin \frac{\alpha - \beta}{2}$$

$$3. \cos \alpha + \cos \beta = 2 \cos \frac{\alpha + \beta}{2} \cos \frac{\alpha - \beta}{2}$$

$$4. \cos \alpha - \cos \beta = -2 \sin \frac{\alpha + \beta}{2} \sin \frac{\alpha - \beta}{2}$$

$$5. \operatorname{tg} \alpha \pm \operatorname{tg} \beta = \frac{\sin(\alpha \pm \beta)}{\cos \alpha \cos \beta}$$

$$6. \operatorname{ctg} \alpha \pm \operatorname{ctg} \beta = \frac{\sin(\alpha \pm \beta)}{\sin \alpha \sin \beta}$$

$$7. \sin x \cdot \cos y = \frac{1}{2} [\sin(x + y) + \sin(x - y)]$$

$$8. \cos x \cdot \sin y = \frac{1}{2} [\sin(x + y) - \sin(x - y)]$$

$$9. \cos x \cdot \cos y = \frac{1}{2} [\cos(x + y) + \cos(x - y)]$$

$$10. \sin x \cdot \sin y = -\frac{1}{2} [\cos(x + y) - \cos(x - y)]$$