

## 4.15 Transforming of Trigonometric Expressions to Sum

$$450. \quad \sin \alpha \cdot \sin \beta = \frac{\cos(\alpha - \beta) - \cos(\alpha + \beta)}{2}$$

$$451. \quad \cos \alpha \cdot \cos \beta = \frac{\cos(\alpha - \beta) + \cos(\alpha + \beta)}{2}$$

$$452. \quad \sin \alpha \cdot \cos \beta = \frac{\sin(\alpha - \beta) + \sin(\alpha + \beta)}{2}$$

$$453. \quad \tan \alpha \cdot \tan \beta = \frac{\tan \alpha + \tan \beta}{\cot \alpha + \cot \beta}$$

$$454. \quad \cot \alpha \cdot \cot \beta = \frac{\cot \alpha + \cot \beta}{\tan \alpha + \tan \beta}$$

$$455. \quad \tan \alpha \cdot \cot \beta = \frac{\tan \alpha + \cot \beta}{\cot \alpha + \tan \beta}$$

