8.2 The Sum and Difference Formulas

OBJECTIVE 1: Understanding the Sum and Difference Formulas for the Cosine Function

The Sum and Difference Formulas for the Cosine Function

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

OBJECTIVE 2: Understanding the Sum and Difference Formulas for the Sine Function

The Sum and Difference Formulas for the Sine Function

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

OBJECTIVE 3: Understanding the Sum and Difference Formulas for the Tangent Function

The Sum and Difference Formulas for the Tangent Function

$$\tan(\alpha+\beta)=\frac{\tan\alpha+\tan\beta}{1-\tan\alpha\tan\beta}$$
$$\tan(\alpha-\beta)=\frac{\tan\alpha-\tan\beta}{1+\tan\alpha\tan\beta}$$

OBJECTIVE 5: Using the Sum and Difference Formulas to Evaluate Expressions Involving Inverse Trigonometric Functions