

Factoring Trigonometric Expressions

Simplify the given trigonometric expressions by factoring.

1 $\frac{\sin x \cos x}{1 - \cos^2 x}$

2 $\frac{\tan^2 \theta}{\sec \theta + 1} + 1$

3 $\frac{1 - \cos^2 \theta}{1 + \cos^2 \theta}$

4 $\frac{1 - \tan^2 \theta}{1 + \tan^2 \theta} + 1$

5 $\frac{\sec^2 \theta - 1}{\tan \theta}$

6 $\frac{\cos \theta}{1 + \sin \theta} + \frac{\cos \theta}{1 - \sin \theta}$

7 $\frac{\cos^2 \theta}{1 - \cos^2 \theta}$

8 $\cos \theta(\sec \theta - \cos \theta)$

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Answers

$$\boxed{1} \quad \frac{\sin x \cos x}{1 - \cos^2 x}$$

$$\frac{\cot x}{}$$

$$\boxed{2} \quad \frac{\tan^2 \theta}{\sec \theta + 1} + 1$$

$$\frac{\sec \theta}{}$$

$$\boxed{3} \quad \frac{1 - \cos^2 \theta}{1 + \cos^2 \theta}$$

$$\frac{1}{1 + 2\cot^2 \theta}$$

$$\boxed{4} \quad \frac{1 - \tan^2 \theta}{1 + \tan^2 \theta} + 1$$

$$\frac{\cos 2\theta}{}$$

$$\boxed{5} \quad \frac{\sec^2 \theta - 1}{\tan \theta}$$

$$\frac{\tan \theta}{}$$

$$\boxed{6} \quad \frac{\cos \theta}{1 + \sin \theta} + \frac{\cos \theta}{1 - \sin \theta}$$

$$\frac{2\sec \theta}{}$$

$$\boxed{7} \quad \frac{\cos^2 \theta}{1 - \cos^2 \theta}$$

$$\frac{\cot^2 \theta}{}$$

$$\boxed{8} \quad \cos \theta (\sec \theta - \cos \theta)$$

$$\frac{\sin^2 \theta}{}$$