# Class 10 Mathematics - Introduction to Trigonometry

**Name: _____**

**Date: _____**

## Advanced Worksheet 4

### Questions

1. Prove that $(1 + \tan^2 A) = \sec^2 A$ for $A = 60°$.
2. Prove that $(1 + \cot^2 A) = \operatorname{cosec}^2 A$ for $A = 30°$.
3. Evaluate $(\sec A + \tan A)(\sec A - \tan A)$ when $A = 45°$.
4. Evaluate $(\operatorname{cosec} A + \cot A)(\operatorname{cosec} A - \cot A)$ when $A = 60°$.
5. Evaluate $(\sin^2 45° + \cos^2 45°) \times (\sec^2 45° - \tan^2 45°)$.
6. Evaluate $(\sin 60° \times \operatorname{cosec} 60°) + (\cos 30° \times \sec 30°)$.

### Answer Key

1. $1 + 3 = 4 = \sec^2 60°$
2. $1 + 3 = 4 = \operatorname{cosec}^2 30°$
3. 1
4. 1
5. 1
6. 2