

Worksheet 7.2b

Verify that the following equations are identities by showing one step at a time.

$$1) \quad \frac{\tan \theta}{\sec \theta} = \sin \theta$$

$$2) \quad \frac{\tan^2 \beta + 1}{\sec \beta} = \sec \beta$$

$$3) \quad \sin^2 x (1 + \cot^2 x) = 1$$

$$4) \quad \frac{\sin^2 A}{\cos A} = \sec A - \cos A$$

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$$5) \quad \sec^4 x - \sec^2 x = \tan^4 x + \tan^2 x \quad 6) \quad (\sec \beta - \tan \beta)^2 = \frac{1 - \sin \beta}{1 + \sin \beta}$$

$$7) \quad \frac{(\sec \theta - \tan \theta)^2 + 1}{\sec \theta \csc \theta - \tan \theta \csc \theta} = 2 \tan \theta$$

$$8) \quad \frac{\sin^4 x - \cos^4 x}{\sin^2 x - \cos^2 x} = 1$$