Pre-Cal CW 4.3-4.4 Trig Identities and Trig Functions of any Angle

State the quadrant in which θ lies.
1. $\tan\theta > 0$ and $\csc\theta < 0$

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2. Find the value of $\tan\theta$ given $\csc\theta = 4$ and $\cot\theta < 0$.

Evaluate the following trigonometric functions:

3. $\tan\dfrac{\pi}{2} =$ 4. $\cos(-600^o) =$ 5. $\csc\dfrac{4\pi}{3} =$

6. $\sec 180^o =$ 7. $\tan\dfrac{-10\pi}{3} =$

Find the reference angle for each. Sketch the angle and the reference angle.

8. 300° 9. $\dfrac{11\pi}{5} =$

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10. Simplify the following trig expression: (final answer should be in terms of $\tan\theta$)
$$\dfrac{(\sin\theta + \sec\theta)^2 + \cos^2\theta - 2}{\tan\theta}$$

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11. Simplify the following trig expression:

$\tan x\sec x(1 - \sin^2 x)$

Verify the following Trig Identities:

12. $\dfrac{1 + \csc\theta}{\sec\theta} - \cot\theta = \cos\theta$ 13. $(1 + \cos\theta)(1 - \cos\theta)(1 + \cot^2\theta) = 1$