

# 5.1 Day 2

Monday, March 18, 2019 10:22 AM

Honors Precalculus  
Opener 5.1 Day 2

Name \_\_\_\_\_

Simplify:

$$1. \frac{\tan^2 x (1 - \sec x)}{(1 + \sec x)(1 - \sec x)}$$

$$\frac{+\tan^2 x (1 - \sec x)}{1 - \sec^2 x}$$

$$\frac{-\tan^2 x (1 - \sec x)}{\sec^2 x - 1}$$

$$\frac{-\tan^2 x (1 - \sec x)}{\tan^2 x}$$

$$-1 + \sec x$$

$$2. \frac{\cot^2 x}{\csc x - 1}$$

$$\frac{\csc^2 x - 1}{\csc x - 1}$$

$$\frac{(\csc x - 1)(\csc x + 1)}{(\csc x - 1)}$$

$$\csc x + 1$$

$$3. \frac{2 - \sin^2 x - 2\cos x}{\cos x - 1}$$

$$\Rightarrow \frac{2 - (1 - \cos^2 x) - 2\cos x}{\cos x - 1}$$

$$\Rightarrow \frac{2 - 1 + \cos^2 x - 2\cos x}{\cos x - 1}$$

$$\Rightarrow \frac{\cos^2 x - 2\cos x + 1}{\cos x - 1}$$

$u^2 - 2u + 1 \Rightarrow (u-1)(u-1)$

$$\Rightarrow \frac{(\cos x - 1)(\cos x - 1)}{(\cos x - 1)}$$

$$\cos x - 1$$

Solve:

$$4. xy^2 = x$$

$$xy^2 - x = 0$$

$$x(y^2 - 1) = 0$$

$$x(y-1)(y+1) = 0$$

$$x = 0 \quad y = 1 \quad y = -1$$

$$5. 3x^2 + 4x = -1$$

$$3x^2 + 4x + 1 = 0$$

$$(3x+1)(x+1) = 0$$

$$x = -1/3 \quad x = -1$$

$$6. 4y^2 - 9 = 0$$

$$(2y-3)(2y+3) = 0$$

$$y = 3/2, y = -3/2$$

$$4y^2 = 9$$

$$y^2 = 9/4$$

$$y = \pm 3/2$$