

Section 5.1 Worksheet

Name: \_\_\_\_\_ (Key)  
 Date: \_\_\_\_\_ Per: \_\_\_\_\_

Find the values of the other 5 trigonometric functions.

<p>1. <math>\sin \theta = \frac{-3}{7}, \tan \theta &gt; 0,</math> <span style="float: right; border: 1px solid black; border-radius: 50%; padding: 2px;">+/-</span></p> <p><math>\sin^2 \theta + \cos^2 \theta = 1</math></p> <p><math>\frac{9}{49} + \cos^2 \theta = 1</math>    <math>\cos^2 \theta = \frac{40}{49}</math></p> <p><math>\cos \theta = \frac{2\sqrt{10}}{7}</math></p> <p><math>\sin \theta = \frac{-3}{7}</math></p> <p><math>\tan \theta = \frac{-3\sqrt{10}}{20}</math></p> <p><math>\csc \theta = -\frac{7}{3}</math></p> <p><math>\sec \theta = -\frac{7\sqrt{10}}{20}</math></p> <p><math>\cot \theta = \frac{2\sqrt{10}}{3}</math></p> <p><math>\tan \theta = \frac{\sin \theta}{\cos \theta}</math></p>	<p>2. <math>\sec \theta = \sqrt{5}, \cot \theta &lt; 0</math> <span style="float: right; border: 1px solid black; border-radius: 50%; padding: 2px;">-/+</span></p> <p><math>1 + \tan^2 \theta = \sec^2 \theta</math></p> <p><math>1 + \tan^2 \theta = 5</math></p> <p><math>\tan^2 \theta = 4</math></p> <p><math>\tan \theta = -2</math></p> <p><math>\sin \theta = \frac{-2}{\sqrt{5}}</math></p> <p><math>\cos \theta = \frac{1}{\sqrt{5}}</math></p> <p><math>\tan \theta = -2</math></p> <p><math>\csc \theta = -\frac{\sqrt{5}}{2}</math></p> <p><math>\sec \theta = \sqrt{5}</math></p> <p><math>\cot \theta = \frac{1}{2}</math></p>
---	---

Simplify each expression.

<p>3. <math>\sec(-x) \cot(-x) \sin(-x)</math></p> <p><math>\frac{1}{\cos x} \cdot \frac{-\cos x}{\sin x} \cdot -\sin x</math></p> <p style="text-align: center; border: 1px solid black; padding: 5px;">+1</p>	<p>4. <math>\csc(-x) - \csc(-x) \cos^2 x</math></p> <p><math>\csc(x) (1 - \cos^2 x)</math></p> <p><math>\csc(-x) \sin^2 x</math></p> <p><math>-\frac{1}{\sin x} \cdot \frac{\sin^2 x}{1} = -\sin(x)</math></p>
<p>5. <math>\frac{\csc^2 x - \cot^2 x}{\sin x \cot x}</math></p> <p><math>\frac{1}{\sin x} \cdot \frac{\cos x}{\sin x}</math></p> <p><math>\frac{1}{\cos x}</math></p> <p style="text-align: center; border: 1px solid black; padding: 5px;">sec x</p>	<p>6. <math>\frac{\cos^2 x \cdot \tan^2(-x) - 1}{\cos^2 x}</math></p> <p><math>\cos^2 x \left( \frac{\sin^2 x}{\cos^2 x} \right) - 1</math></p> <p style="text-align: center; border: 1px solid black; padding: 5px;">-cos^2(x)</p>
<p>7. <math>\frac{\sin x(1 + \sin x)}{1 - \cos^2 x} - 1</math></p> <p><math>\frac{\sin x + \sin^2 x}{\sin^2 x} - 1</math></p> <p><math>\frac{\sin x}{\sin^2 x} + \frac{\sin^2 x}{\sin^2 x} - 1</math></p> <p><math>\frac{1}{\sin x} + 1 - 1</math></p> <p><math>\csc x + 1 - 1</math></p> <p style="text-align: center; border: 1px solid black; padding: 5px;">csc x</p>	<p>8. <math>\frac{\sec x - \cos x}{\tan x \sin x}</math></p> <p><math>\frac{1}{\cos x} - \frac{\cos x}{1}</math></p> <p><math>\frac{\sin x}{\cos x} \cdot \sin x</math></p> <p><math>\frac{1 - \cos^2 x}{\cos x} \cdot \frac{\cos x}{\sin^2 x}</math></p> <p style="text-align: center; border: 1px solid black; padding: 5px;">1</p>