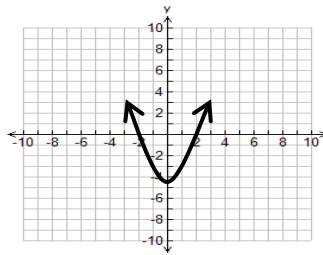


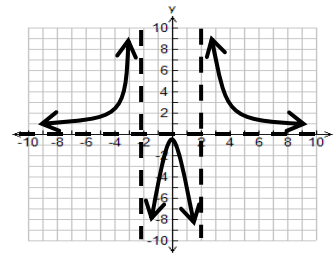
5.7 – Sketching the Reciprocal Trigonometric Functions

Recall the reciprocal graphing techniques used for sketching rational functions like the reciprocal linear and the reciprocal quadratic functions from unit #2.

Ex. if $y = f(x)$



then $y = 1/f(x)$

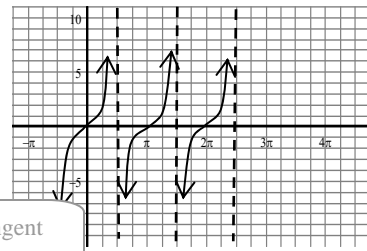
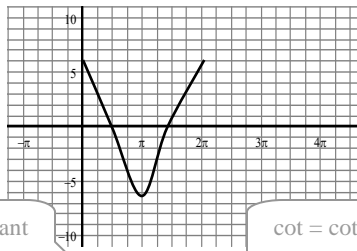
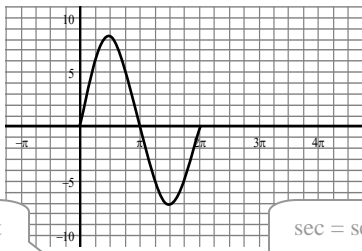


The same technique can be used to sketch the reciprocal trigonometric functions.

$$f(x) = \sin \theta$$

$$g(x) = \cos \theta$$

$$h(x) = \tan \theta$$



csc = cosecant

sec = secant

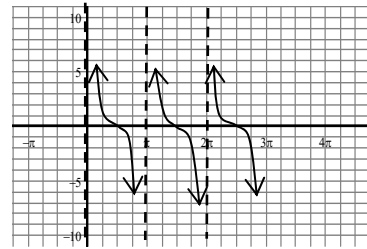
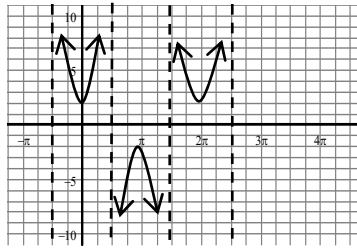
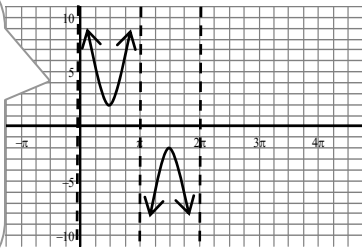
cot = cotangent

$$\csc \theta = 1/\sin \theta$$

$$\sec \theta = 1/\cos \theta$$

$$\cot \theta = 1/\tan \theta$$

Note that these sketches are to give one a general idea of the shape and are not exact as have stretch factors.



Use the accompanying sheets to accurately sketch the reciprocal trigonometric functions. Once sketched describe the period, amplitude, domain, range, increasing and decreasing intervals in the table below;

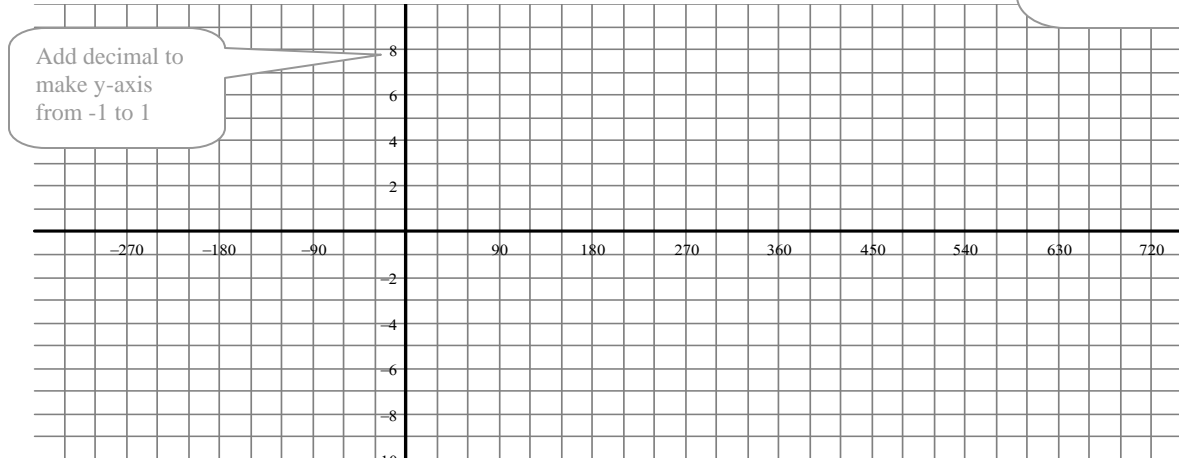
Function	Increasing	Decreasing	Domain	Range	Period	Amplitude
$\sin \theta$						
$\csc \theta$						
$\cos \theta$						
$\sec \theta$						
$\tan \theta$						
$\cot \theta$						

5.7 – Sketching the Reciprocal Trigonometric Functions Investigation Sheet

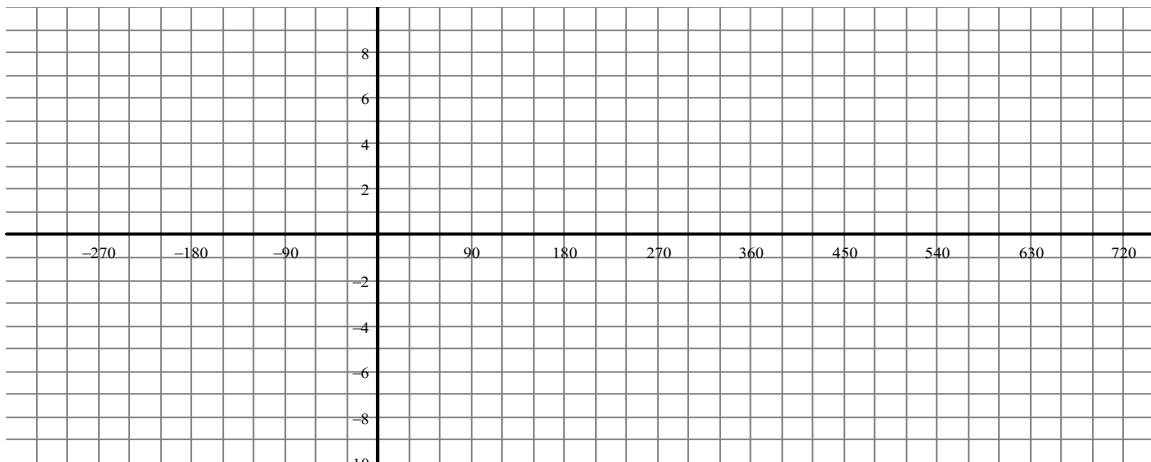
Reciprocal Trigonometric Functions using degrees

Have your sketches from section 5.4 on top of these functions so you can take the reciprocal of them.

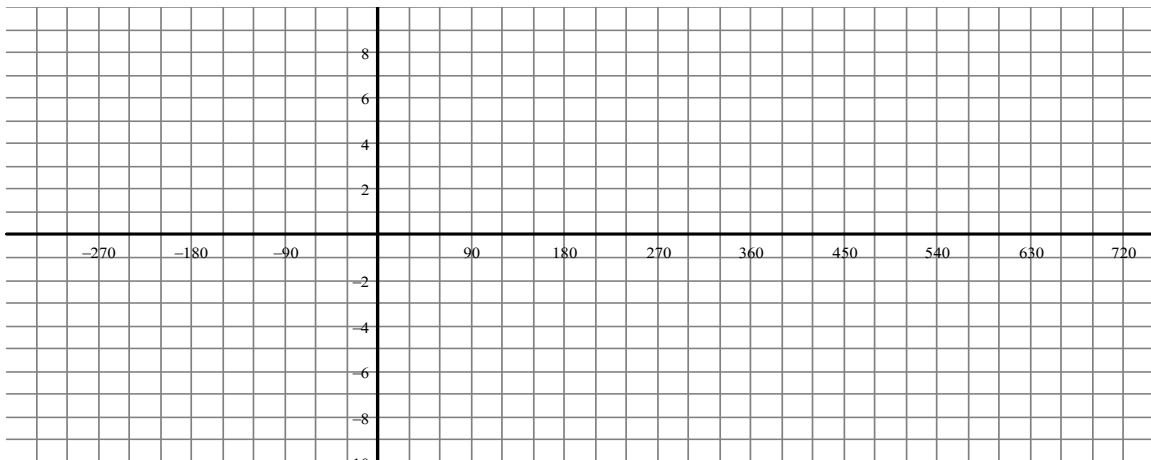
1) $f(x) = \csc \theta$



2) $g(x) = \sec \theta$



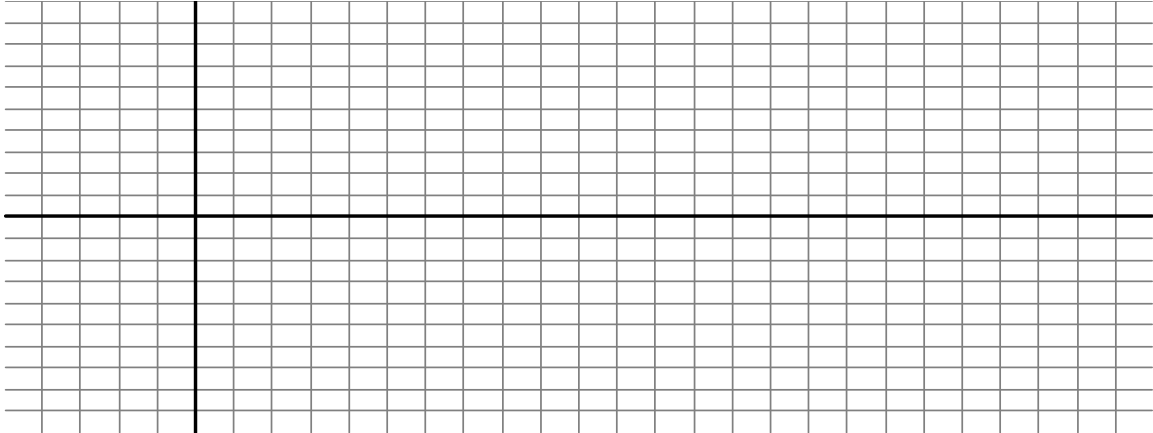
3) $h(x) = \cot \theta$



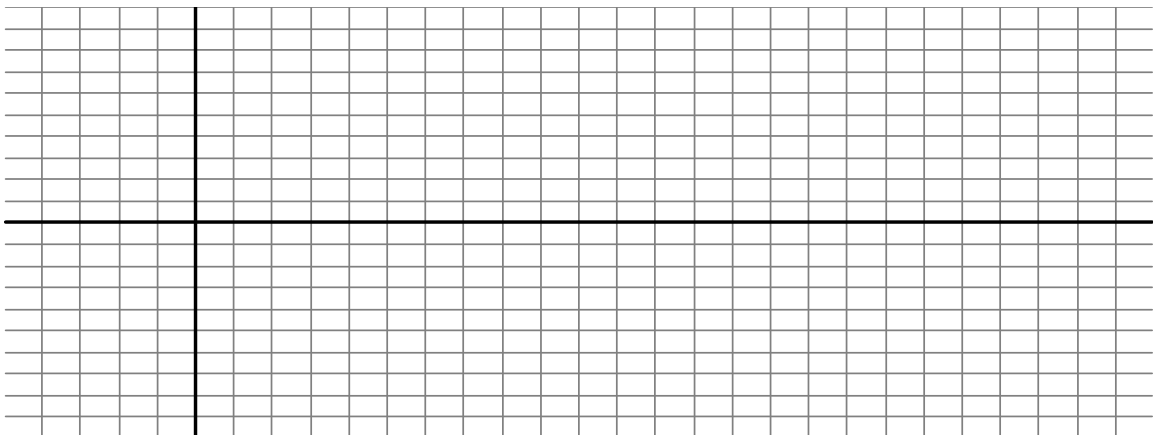
5.7 – Sketching the Reciprocal Trigonometric Functions Investigation Sheet

Basic Trigonometric Functions using radians

1) $f(x) = \csc x$



2) $g(x) = \sec x$



3) $h(x) = \cot x$

