Lecture 7 (L7): Graphs of Other Trigonometric Functions
Textbook Section: 4.6

Review:
Graph of Tangent:

Recall the relationship between sine, cosine, and tangent is ________________.

The tangent function is undefined at values for which ________________ is ________________. Tangent is an ________________ function, so the graph will be symmetric about the ________________.

Problem: Consider the tangent function on the interval \([-\frac{\pi}{2}, \frac{\pi}{2}\]). What will the graph of tangent look like?

The period of tangent is ________________.

The domain is ________________.

The range is ________________.

The function has vertical asymptotes at ________________.
Graph of Cotangent:

Recall the relationship between sine, cosine, and cotangent is _________________. The cotangent function is undefined at values for which _________________ is ______________. Cotangent is an ________________ function, so the graph will be symmetric about the ________________.

Problem: Consider the cotangent function on the interval \([0, \pi]\). What will the graph of cotangent look like?

The period of cotangent is _________________.
The domain is _________________.
The range is _________________.
The function has vertical asymptotes at _________________.

3
Graph of Cosecant:

Recall the relationship between sine and cosecant is __________________________.

The cosecant function is undefined at values for which _____________________ is ___________. Cosecant is an ________________ function, so the graph will be symmetric about the ________________.

Problem: Consider the cosecant function on the interval \([-\pi, \pi]\). What will the graph of cosecant look like?

The period of cosecant is ____________________________.

The domain is _____________________________.

The range is _____________________________.

The function has vertical asymptotes at _____________________________.

The domain is _____________________________.

The range is _____________________________.

The function has vertical asymptotes at _____________________________.

4
Graph of Secant:

Recall the relationship between cosine and secant is _________________.

The secant function is undefined at values for which _________________ is ____________. Secant is an ________________ function, so the graph will be symmetric about the _____________.

Problem: Consider the secant function on the interval \([-\frac{\pi}{2}, \frac{\pi}{2}]\). What will the graph of secant look like?

The period of secant is _____________________.

The domain is _________________________.

The range is _________________________.

The function has vertical asymptotes at _________________________.

5
**Problem:** How do the constants $a, b, c,$ and $d$ affect the graphs of

$f(x) = d + a \tan(bx - c)$

$f(x) = d + a \cot(bx - c)$

$f(x) = d + a \csc(bx - c)$

$f(x) = d + a \sec(bx - c)$