Math 1113
Section 2.5

2.5 Graphing Tangent and Other Trigonometry Functions
Practice Worksheet

1. Write the equation of the following Tangent functions.

$f(x)$

$x = -\frac{5\pi}{8}$ $x = -\frac{\pi}{8}$ $x = \frac{3\pi}{8}$

a)
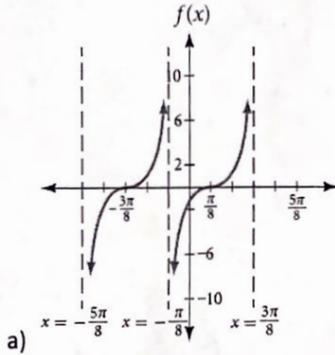
Period can be calculated by finding the difference between two consecutive asymptotes.

$\frac{3\pi}{8} - -\frac{\pi}{8} = \frac{\pi}{2}$ $P = \frac{\pi}{2}$ $B = \frac{\pi}{\pi/2} = 2$

Equation: ___$f(x) = \tan(2x)$_____

$x = -12$ $x = -4$ $x = 4$ $x = 12$

b)
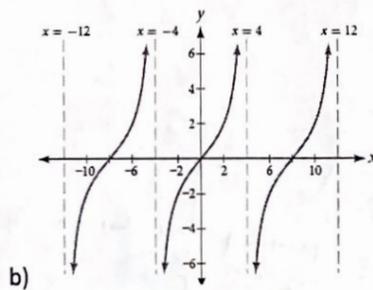
$4 - -4 = 8$ $P = 8$ $B = \frac{\pi}{8}$

Equation: ___$f(x) = \tan(\frac{\pi}{8}x)$_____

2. Graph at least one cycle of the following tangent functions.

a) $f(x) = \tan(4x)$
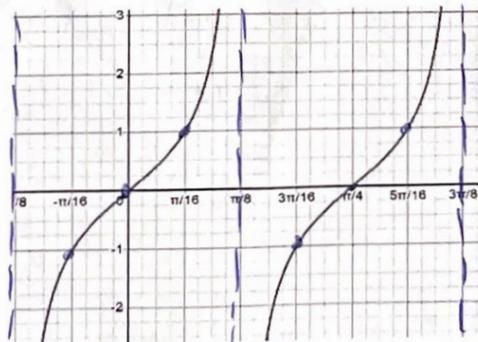
In tangents the first set of asymptotes are $-\frac{\pi}{2}$ and $\frac{\pi}{2}$.

$-\frac{\pi}{2} < 4x < \pi/2$

$-\pi/8 < x < \pi/8$

$P = \frac{\pi}{4}$ Scale $= \frac{\pi}{16}$
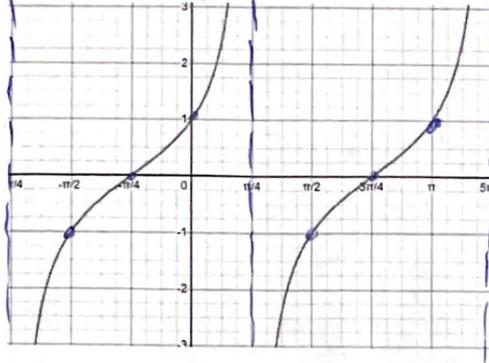
b) $f(x) = \tan\left(x + \frac{\pi}{4}\right)$

3. Graph at least one cycle of the following functions.
   a) $f(x) = 3\cot(2x)$
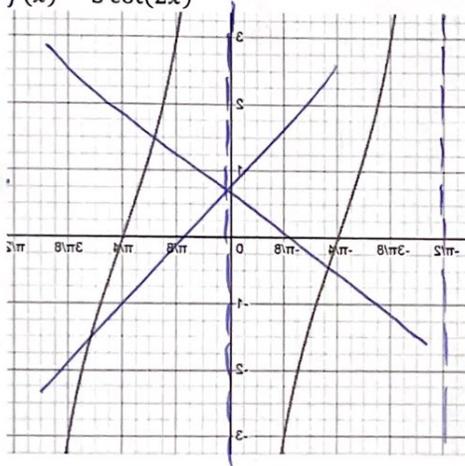
The picture has been flipped.

b) $f(x) = 2\csc\left(x + \frac{\pi}{2}\right) - 1$

$-\frac{\pi}{2} < x + \frac{\pi}{4} < \frac{\pi}{2}$

$-\pi/4 \qquad -\pi/4 \qquad -\pi/4$

$-\frac{3\pi}{4} < x < \frac{\pi}{4}$

$P = \pi \qquad Scale = \pi/4$

In cotangents the first set of asymptotes are at 0 and π

$0 < 2x < \pi$

$0 < x < \frac{\pi}{2}$

$P = \frac{\pi}{2} \qquad Scale = \frac{\pi}{8}$
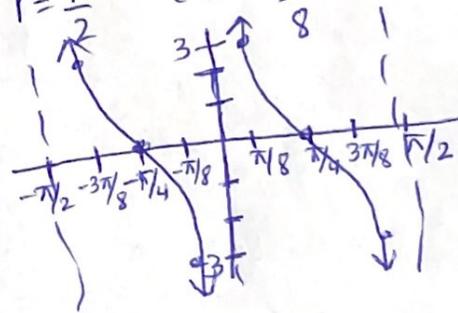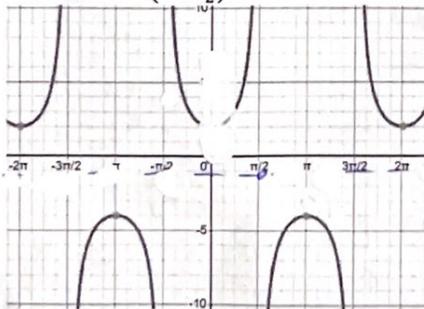
To graph cosecant function. we can first graph a sine function.

$2\sin(x + \pi/2) - 1$

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c) $f(x) = -\sec\left(x - \frac{\pi}{3}\right) + 1$
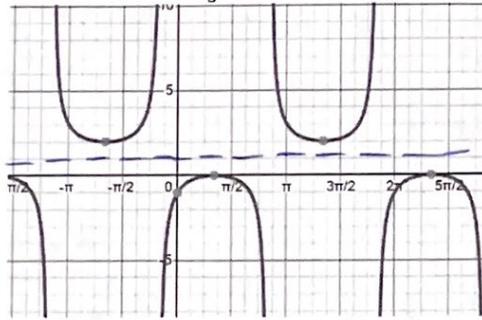
To graph the secant function we start by graphing a similar cosine function.

$$y = -\cos(x - \pi/3) + 1$$