**Trigonometric Functions and their Graphs - Handout/Worksheet**

NAME:
DATE:

1. **Period**

   If $b > 0$, then the graph of either

   $f(t) = \sin(bt)$ or $g(t) = \cos(bt)$

   makes $b$ complete waves between 0 and $2\pi$. Hence, each function has period $2\pi/b$.

2. **Amplitude and Period**

   If $A \neq 0$ and $b > 0$, then each of the functions

   $f(t) = A\sin(bt)$ or $g(t) = A\cos(bt)$

   has amplitude $|A|$ and period $2\pi/b$.

3. **Amplitude, Period and Phase Shift**

   If $A \neq 0$ and $b > 0$, then each of the functions

   $f(t) = A\sin(bt + c)$ or $g(t) = A\cos(bt + c)$

   has amplitude $|A|$, period $2\pi/b$ and phase shift $-c/b$.

   A wave of the graph begins at $t = -c/b$.

1. Find the exact value of the sine, cosine, and tangent of the number, without using a calculator.

   $(a).\quad \dfrac{-7\pi}{3}$ $(b).\quad \dfrac{3\pi}{2}$

2. List the transformations needed to change the graph of $f(t) = \cos t$ into the graph of $g(t) = \cos t - 2$.

3. Sketch a complete graph of the function $f(t) = 3\sin(3t - \pi)$.