12.7 - Double and Triple Time

*Update on Schedule for finishing Chapter 12

*Making sure you built a correct model (12.6)

*Assignment Time: Double and Triple Time

*Quick questions so far

*Reading on "Loudness of Sound"

*Quick Notes on Decibels-Intensity Model

Original Model for 12.6

\[
\begin{align*}
(0, 1) & \quad (20, 2) \\
\frac{b^{20}}{b^0} &= \frac{2}{1} \\
b^{20} &= 2 \\
b &= \sqrt[20]{2}
\end{align*}
\]

\[A(t) = A_0 b^t\]

\[
A(t) = 1 \left(20\sqrt{2}\right)^t
\]

\[V(t) = \pi \cdot 1 \cdot \left(\sqrt{2}\right)^t
\]
Assignment (Packet Due Friday, February 5)

1) Chapter 12 Problems Packet
   a) 12.1 / 12.3 / 12.8 / 12.4 / 12.5 / 12.6 / 12.7
   b) 12.9 / 12.10 / 12.11
   c) 

   *) Make sure you are showing ALL operations/work

2) All Unit 12 grades will be entered for Semester 2
\[ 1.63^t = 1.58 \left( 0.73^t \right) \]

\[
\log_{1.63} 1.63^t = \log_{1.63} \left[ 1.58 \left( 0.73^t \right) \right] 
\]

\[
t = \log_{1.63} 1.58 + \log_{1.63} 0.73^t + t \cdot \log_{1.63} 0.73 
\]

\[ t = 1.02 + t(-2) \]
1.9 / 12.10 / 12.11

\[ \text{Ants} = 200 \theta \]
12.7a : Relative Intensity Function

Look at the function from an exponential perspective
\[ y = C \log_a (\frac{x}{I_0}) \]
y is measure value, \( x \) is Intensity
can be rewritten as
\[ y = C \log_a (x) - C \log_a (I_0) \]
or
\[ y + C \log_a (I_0) = C \log_a (x) \]
many of these quantities (\( a, C, I_0 \)) are known, so we rewrite as
\[ \frac{y}{C} + R = \log_a (x) \]
and then rewriting exponentially
\[ a^{(\frac{y}{C} + R)} = x \]
once more to \[ x = A_0 b^y \]
"inverse of above"

Assignment (Packet Due Friday, February 5)
1) Chapter 12 Problems Packet
   a) 12.1 / 12.3 / 12.8 / 12.4 / 12.5 / 12.6 / 12.7
   b) 12.9 / 12.10 / 12.11
   c) 12.12 / 12.2

*) Make sure you are showing ALL operations/work
2) All Unit 12 grades will be entered for Semester 2