Mathematics 122     Quiz 3     Name:  

(1) If $P(t) = 35.6(1.34)^t$ then compute $P(4.6)$.

\[ P(4.6) = 35.6 \times (1.34)^{4.6} \]

(2) If $P(t) = 6.1e^{-3t}$, then compute $P(7.2)$.

\[ P(7.2) = 6.1e^{-3 \times 7.2} \]

(3) The following is a graph $y = P(t)$ of an exponential function. Find a formula for $P(t)$.

\[ P(t) = 75 \times (1.776)^t \]

The initial value is $P_0 = 75$.

So

\[ P(0) = 75a^0 \]

To find $a$, plug in $t = 6$.

\[ P(6) = 75a^6 = 200 \]

So

\[ a^6 = \frac{200}{75} \]

\[ a = \left( \frac{200}{75} \right)^{\frac{1}{6}} = 1.7776 \]