Section 2.1
Exponential Functions
Q/A

- Worksheet
- Homework
Two basic exponential models:

\[ y = Pe^{rt} \]

\[ y = p_0a^t \]

\[ a = e^r \]

\[ \Rightarrow r = ? \]

1) \[ y = 3e^{2t} = 3(e^2)^t = 3a^t \]

\[ \text{where } a = e^2 \]

2) \[ y = 6\cdot4^t = 6\cdot2^{2t} \]
Solving $2^x = 16$ vs. $2^x = 24$

$\leftarrow$ need $\log_2$
Modeling population growth

1 hour: \(10 \times 2 \times 2 = 40\)

3 hours: \(10 \times 2 \times 2 \times 2 \times 2 \times 2 = 10 \times 2^6 = 640\)

\(t\) hours: \(10 \times 2^t = 10 \times 4^t\)

\(P = 10e^{rt}\)
Modeling drug concentration

\[ P = P_0 e^{-rt} \]

Graph showing concentration over time,

\( P \) vs. \( t \)
Other questions from reading?