## Logarithmic Properties

While working in a group make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.
- 1. Find the value t in the following by writing logarithmic equations as exponential equations or vice versa.

(a) 
$$2 = e^{-.02t}$$

(b) 
$$\log_2(t+2) = 5$$

(c)  $\log(10^4) = t$ 

2. Write the expressions as a single logarithm:  $\ln(x) - \ln(y) + 3\ln(z)$ 

$$\frac{1}{3}\log(2x+1) - 2\log(x^4 - x^2 - 1)$$

3. Expand the expressions:

 $\log_2(2x)$ 

