Log Practice Problems

Answers

Solve the following expressions.

1. \( \ln x = \ln 2x + y \) \( y = -0.693 \)

2. \( \ln \frac{x}{5.00} = -3.50 \) \( x = 0.151 \)

3. Solve for \( E_a \) at a temperature of 298K given the following expression:  
   \((R = 8.314 \text{ J/K mol})\)
   \[ 5.1 \times 10^{-3} = e^{-\frac{E_a}{RT}} \]  
   \[ E_a = 13.1 \text{ kJ} \]

4. \( 2x = 0.00135 \) \( x = -9.533 \)

5. Antilog 5.2 = \( 1.58 \times 10^5 \)

   \[ \ln \frac{0.025}{0.075} = -1.099 \]

7. \( \frac{\ln 0.025}{\ln 0.83} = 19.8 \)

8. Solve the following equation for \( E_a \): (e.g. \( E_a = ?? \))
   \[ k = A e^{-\frac{E_a}{RT}} \]
   \[ E_a = -RT \ln \frac{k}{A} \]