**k = Ae$^{-E_a/RT}$** Group Work for Kinetics Lab Part 2.  Name:_____

A series of kinetics experiments were carried out and the rate constants at various temperatures were determined.

| Rate constant (k) min$^{-1}$ | Temperature (K) | ln k | 1/T (K$^{-1}$) |
|---|---|---|---|
| 0.000218 | 293 | | |
| 2.00E-03 | 322 | | |
| 0.004773 | 335 | | |
| 0.013508 | 352 | | |

**The Arrhenius Equation:   k = Ae$^{-E_a/RT}$**     ( R = 8.314 J/(mol·K)

**Take the ln of each side.    ln k = ln A - Ea/RT**

**In the y = b + mx   form:   ln k = ln A - $\dfrac{E_a}{R}\dfrac{1}{T}$**

$$y\ =\ b\ -\ m\ x$$

**Construct a Graph to determine the activation energy.**