|  |  |  |  |
| --- | --- | --- | --- |
| **Example Data for Prelab** | | | |
| **Fluoride Standards** | | **Cell Potential (mV)** | |
| **Concentration (M)** | **Log[F-] (M)** | **Average (n = 5)** | **Std. Dev** |
| 0.000001 | -6 | 111 | 9.8 |
| 0.00001 | -5 | 63.8 | 7.8 |
| 0.0001 | -4 | 5.5 | 6.2 |
| 0.001 | -3 | -52.9 | 4.4 |
| 0.01 | -2 | -111.1 | 5.1 |
| 0.1 | -1 | -168.9 | 3.5 |

|  |  |
| --- | --- |
| **Sample weighed (g)** | 0.2215 |
| **Volume dissolution (mL)** | 100 |
| **n** | 5 |
| **Average response (mV)** | -14.5 |
| **Error in response (mV)** | 5.2 |
| **Concentration of F- (M)** | 0.000202762 |
| **Molar mass of F- (g/mol)** | 18.998 |
| **Error in molar mass (g/mol)** | 0.0000005 |
| **Mass of F- (g)** | 0.000385208 |
| **Weight % of F- (%)** | 0.17 |

|  |  |  |  |
| --- | --- | --- | --- |
| **LINEST FUNCTION** | | | |
| **m** | -56.6457 | -223.6933 | **b** |
| **um** | 0.8984 | 3.4987 | **ub** |
| **R^2** | 0.9990 | 3.7582 | **sy** |
| **Fisher value** | 3975.6542 | 4.0000 | **df** |
| **regression ss** | 56152.8966 | 56.4968 | **residual ss** |

|  |  |
| --- | --- |
| **95% CI** | |
| **t table** | 2.7764 |
| **t\*um** | 2.4943 |
| **t\*ub** | 9.7140 |
| **t\* error in average response** | 14.4375 |
| **numerator value** | 209.1933 |
| **error in numerator** | 17.4012 |
| **denominator value** | -56.6457 |
| **num/denom** | -3.6930 |
| **error num/denom** | -0.3476 |
| **Concentration of F- (M)** | 0.00020 |
| **error in concentration (M)** | -0.00016 |