**Obruchev Glacial Budget Exercise**

**Step 1: Hypothesise**

Hypothesis, H1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Null Hypothesis, H0: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 2: Calculate Spearman’s Rank Correlation Coefficient**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Annual Balance (g/cm2)** | **Rank 1** | **Height of ELA (m)** | **Rank 2** | **d** | **d2** |
| **1959-60** | -50 |  | 530 |  |  |  |
| **1960-61** | -21 |  | 552 |  |  |  |
| **1961-62** | -15 |  | 516 |  |  |  |
| **1962-63** | -73 |  | 562 |  |  |  |
| **1963-64** | -130 |  | 566 |  |  |  |
| **1964-65** | -36 |  | 540 |  |  |  |
| **1965-66** | 28 |  | 507 |  |  |  |
| **1966-67** | 20 |  | 497 |  |  |  |
| **1967-68** | 181 |  | 471 |  |  |  |
| **1968-69** | -55 |  | 556 |  |  |  |
| **1969-70** | 34 |  | 490 |  |  |  |
| **1970-71** | -21 |  | 517 |  |  |  |
| **1971-72** | 85 |  | 483 |  |  |  |
| **1972-73** | 18 |  | 520 |  |  |  |
| **1973-74** | -68 |  | 581 |  |  |  |
| **1974-75** | 17 |  | 502 |  |  |  |
| **1975-76** | -135 |  | 574 |  |  |  |
| **1976-77** | -164 |  | 584 |  |  |  |
| **1977-78** | 156 |  | 484 |  |  |  |
| **1978-79** | -1 |  | 543 |  |  |  |
|  |  |  |  |  | Σd2 |  |
|  |  |  |  |  | 6Σd2 |  |
|  |  |  |  |  | n |  |
|  |  |  |  |  | n(n2-1) |  |
|  |  |  |  |  | rs |  |

**Step 3: Interpret the result and determine its significance**

Value of rs means: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Significance: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_