INDEX and MATCH functions

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Product ID** | **Product** | **Category** | **Jan Sales** | **Feb Sales** | **Mar Sales** | **Apr Sales** | **May Sales** |
| 101 | PRODA | Electronics | 120 | 130 | 140 | 150 | 160 |
| 102 | PRODB | Furniture | 150 | 160 | 170 | 180 | 190 |
| 103 | PRODC | Electronics | 200 | 210 | 220 | 230 | 240 |
| 104 | PRODD | Clothing | 90 | 100 | 110 | 120 | 130 |
| 105 | PRODE | Furniture | 220 | 230 | 240 | 250 | 260 |
| 106 | PRODF | Electronics | 130 | 140 | 150 | 160 | 170 |

1. **Use INDEX and MATCH to find the sales for Product C in March.**

**Step1:- Product C (PRODC)** in **March** using the INDEX and MATCH functions.

1. **INDEX**: Use this function to pull data from a specific cell within a specified range.
2. **MATCH**: Use this function to locate the position of a specified value within a range.

**Step2:- Formula**

**=INDEX (D2:H7, MATCH("PRODC", B2:B7, 0), MATCH("Mar Sales", D1:H1, 0))**

| **Product** | **Month** | **Sales** |
| --- | --- | --- |
| PRODC | March | 220 |

**2. Use INDEX and MATCH to find the category for Product E.**

Step 1:- To find the **Category** for **Product E (PRODE)** using the INDEX and MATCH functions

**Step2:- Column B** and **Categories** are in **Column C**, the formula this

=INDEX (C2:C7, MATCH ("PRODE", B2:B7, 0))

| **Product** | **Category** |
| --- | --- |
| PRODE | Furniture |

1. **Use INDEX and MATCH to find the maximum sales for Product B across all months.**

**Step1:- maximum sales for Product B** across all months using the INDEX and MATCH functions.

Step2:- Product Names are in Column B ,Sales for each month (Jan, Feb, Mar, Apr, May) are in Columns D to H.

### Step3:-Formula

**=MAX (INDEX (D2:H7, MATCH ("PRODB", B2:B7, 0), 0))**

* **INDEX (D2:H7, MATCH ("PRODB", B2:B7, 0), 0)** returns the entire row of sales data for **Product B**.
* MAX (...) finds the maximum value across that row.

| **Product** | **Max Sales** |
| --- | --- |
| PRODB | 190 |

1. **Use INDEX and MATCH to find the month with the maximum sales for Product A.**

Step1:- find the **month with the maximum sales** for **Product A (PRODA)** using the INDEX and MATCH functions

Step 2:- Formula

1. Find the sales data for Product A.

2. Identify the maximum sales value.

3. Use MATCH to find the position of that maximum value.

**=INDEX (D1:H1, MATCH(MAX(INDEX(D2:H7, MATCH("PRODA", B2:B7, 0), 0)), INDEX(D2:H7, MATCH("PRODA", B2:B7, 0), 0), 0))**

| **Product** | **Month with Max Sales** |
| --- | --- |
| PRODA | May |

1. **Use INDEX, MATCH, and SUMIF to sum the sales for all products in the "Electronics" category for April.**

Step1:- To sum the sales for all products in the **"Electronics"** category for **April** using INDEX, MATCH, and SUMIF

Step2:- Formula

**=SUMIF(C2:C7, "Electronics", D2:D7) + SUMIF(C2:C7, "Electronics", E2:E7) + SUMIF(C2:C7, "Electronics", F2:F7) + SUMIF(C2:C7, "Electronics", G2:G7) + SUMIF(C2:C7, "Electronics", H2:H7)**

| **Category** | **Total April Sales** |
| --- | --- |
| Electronics | 540 |

1. **Use INDEX and MATCH to calculate the average sales for Product D across all months.**

Step1:- To calculate the **average sales** for **Product D (PRODD)** across all months using INDEX and MATCH,

### Step2:-Formula

**=AVERAGE(INDEX(D2:H7, MATCH("PRODD", B2:B7, 0), 0))**

| **Product** | **Average Sales** |
| --- | --- |
| PRODD | 110 |

1. **Use INDEX and MATCH to find the sales for Product ID 105 in May.**

Step1:- To find the **sales for Product ID 105** in **May** using the INDEX and MATCH functions

### Step2:-Formula

**=INDEX(G2:H7, MATCH(105, A2:A7, 0), 1)**

| **Product ID** | **Month** | **Sales** |
| --- | --- | --- |
| 105 | May | 260 |

1. **Use INDEX and MATCH to create a dynamic lookup where the user can input a product and a month, and the formula returns the corresponding sales.**

Step 1:- Setup

* + Designate **Cell J1** for the **Product Name** (e.g., PRODA).
  + Designate **Cell J2** for the **Month** (e.g., Mar Sales).
  + Designate **Cell J3** for displaying the **Sales Result**.

### Step 2:- Sales Data Table

| **Product ID** | **Product** | **Category** | **Jan Sales** | **Feb Sales** | **Mar Sales** | **Apr Sales** | **May Sales** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 101 | PRODA | Electronics | 120 | 130 | 140 | 150 | 160 |
| 102 | PRODB | Furniture | 150 | 160 | 170 | 180 | 190 |
| 103 | PRODC | Electronics | 200 | 210 | 220 | 230 | 240 |
| 104 | PRODD | Clothing | 90 | 100 | 110 | 120 | 130 |
| 105 | PRODE | Furniture | 220 | 230 | 240 | 250 | 260 |
| 106 | PRODF | Electronics | 130 | 140 | 150 | 160 | 170 |

Step 3:- Dynamic Lookup Formula

| **Input** | **Cell Reference** | **Value** |
| --- | --- | --- |
| Product Name | J1 | PRODA |
| Month | J2 | Mar Sales |
| **Sales Result** | J3 | =INDEX(D2  , MATCH(J1, B2  , 0), MATCH(J2, D1  , 0)) |

**=INDEX(D2:H7, MATCH(J1, B2:B7, 0), MATCH(J2, D1:H1, 0))**

| **Output** | **Cell Reference** | **Value** |
| --- | --- | --- |
| Sales | J3 | 140 |