**IF Statement Lab**

**Worksheet: Sales Data**

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| **Product ID** | **Product** | **Sales** | **Target** |
| 101 | Product A | 120 | 150 |
| 102 | Product B | 150 | 140 |
| 103 | Product C | 200 | 200 |
| 104 | Product D | 90 | 100 |
| 105 | Product E | 220 | 210 |
| 106 | Product F | 130 | 160 |

**Ques1: Use the IF function to evaluate whether each product met its sales target.**

**Solution:**

**Step1:** Create a new column(F1) next to Target Column named Target Met or Not.

**Step2:** By using the following formula

**=IF(C2>=D2,"Target Met", "Target Not Met")** at column F2 we can find if the Target is Met or Not.

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| **Product ID** | | **Product** | **Sales** | **Target** | **Region** | **Target Met or not** |
| 101 | Product A | | 120 | 150 | North | Target not met |
| 102 | Product B | | 150 | 140 | South | Target met |
| 103 | Product C | | 200 | 200 | East | Target met |
| 104 | Product D | | 90 | 100 | West | Target not met |
| 105 | Product E | | 220 | 210 | North | Target met |
| 106 | Product F | | 130 | 160 | South | Target not met |

**Ques2:** **Use the IF function to determine if a product is eligible for a regional bonus. Products in the "North" region with sales over 200 are eligible.**

**Solution:**

**Step1:** Create a new column(G1) named Eligible for Bonus.

**Step2:**By using the formula **=IF(AND(E2="North",C2>200),"Eligible", "Not Eligible")**

at column(G2) we can get if the product is eligible for a regional bonus or not.

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| **Product ID** | **Product** | **Sales** | **Target** | **Region** | **Target Met or not** | **Eligible for Bonus** |
| 101 | Product A | 120 | 150 | North | Target not met | Not Eligible |
| 102 | Product B | 150 | 140 | South | Target met | Not Eligible |
| 103 | Product C | 200 | 200 | East | Target met | Not Eligible |
| 104 | Product D | 90 | 100 | West | Target not met | Not Eligible |
| 105 | Product E | 220 | 210 | North | Target met | Eligible |
| 106 | Product F | 130 | 160 | South | Target not met | Not Eligible |

**Ques3: Use nested IF functions to assign a commission rate based on sales. Sales >= 200 get a 10% commission, sales >= 150 get a 7% commission, and others get a 5% commission.**

**Solution:**

**Step1:** Create a new column(H1) named Commission.

**Step2:** By using the formula **=IF(C2>=200,"10%",IF(C2>=150,"7%","5%"))** at column H2

we get the Commission rate based on the condition.

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| **Product ID** | **Product** | **Sales** | **Target** | **Region** | **Target Met or not** | **Eligible for Bonus** | **Commission** |
| 101 | Product A | 120 | 150 | North | Target not met | Not Eligible | 5% |
| 102 | Product B | 150 | 140 | South | Target met | Not Eligible | 7% |
| 103 | Product C | 200 | 200 | East | Target met | Not Eligible | 10% |
| 104 | Product D | 90 | 100 | West | Target not met | Not Eligible | 5% |
| 105 | Product E | 220 | 210 | North | Target met | Eligible | 10% |
| 106 | Product F | 130 | 160 | South | Target not met | Not Eligible | 5% |

**Ques4:** **Use the IF function to calculate a bonus amount. If sales met or exceeded the target, the bonus is 10% of the sales; otherwise, it's 5%.**

**Solution:**

**Step1:** Create a new column(I1) named Bonus amount.

**Step2:** By using the formula **=IF(C2>=D2,0.1\*C2,0.05\*C2)** at column I2 we get the Bonus amount.

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| **Product** | **Sales** | **Target** | **Region** | **Target Met or Not** | **Eligible for Bonus** | **Commission** | **Bonus amount** |
| Product A | 120 | 150 | North | Target Not Met | Not Eligible | 5% | 6 |
| Product B | 150 | 140 | South | Target Met | Not Eligible | 7% | 15 |
| Product C | 200 | 200 | East | Target Met | Not Eligible | 10% | 20 |
| Product D | 90 | 100 | West | Target Not Met | Not Eligible | 5% | 4.5 |
| Product E | 220 | 210 | North | Target Met | Eligible | 10% | 22 |
| Product F | 130 | 160 | South | Target Not Met | Not Eligible | 5% | 6.5 |

**Ques5:** **Use the IF function to categorize sales performance as "Excellent" (>=200), "Good" (>=150), or "Needs Improvement" (<150).**

**Solution:**

**Step1:** Create a new column(J1) named Bonus amount.

**Step2:** By using the formula

**=IF(C2>=200,"Excellent",IF(C2>=150,"Good",IF(C2<150,"Needs Improvement")))**

at column J2 we get the Performance of each Product.

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| **Product ID** | **Product** | **Sales** | **Target** | **Region** | **Performance** |
| 101 | Product A | 120 | 150 | North | Needs Improvement |
| 102 | Product B | 150 | 140 | South | Good |
| 103 | Product C | 200 | 200 | East | Excellent |
| 104 | Product D | 90 | 100 | West | Needs Improvement |
| 105 | Product E | 220 | 210 | North | Excellent |
| 106 | Product F | 130 | 160 | South | Needs Improvement |

**Ques6: Use the IF function to assign a price tier based on the sales value. "High" for sales > 200, "Medium" for sales between 100 and 200, and "Low" for sales < 100.**

**Solution:**

S**tep1:** Create a new column(G12) named Price Tier.

**Step2:** By using the formula **=IF(C13>=200,"High",IF(AND(C13<200,C13>100),"Medium",IF(C13<100,"Low")))**

at column G13 we get Price Tier for each product.

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| **Product ID** | **Product** | **Sales** | **Target** | **Region** | **Performance** | **Price Tier** |
| 101 | Product A | 120 | 150 | North | Needs Improvement | Medium |
| 102 | Product B | 150 | 140 | South | Good | Medium |
| 103 | Product C | 200 | 200 | East | Excellent | High |
| 104 | Product D | 90 | 100 | West | Needs Improvement | Low |
| 105 | Product E | 220 | 210 | North | Excellent | High |
| 106 | Product F | 130 | 160 | South | Needs Improvement | Medium |

**Ques7:** **Use the IF function to calculate the year-end bonus. If sales >= 150 and region is "North", the bonus is $500, otherwise, it's $300.**

**Solution:**

**Step1:** Create a new column(H12) named Year-end Bonus.

**Step2:** By using the formula **=IF(AND(C13>=150,E12="North"),"$500","$300")** at column H13

We get the Year-end Bonus for each Product.

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| **Product ID** | **Product** | **Sales** | **Target** | **Region** | **Performance** | **Price Tier** | **Year-end Bonus** |
| 101 | Product A | 120 | 150 | North | Needs Improvement | Medium | $300 |
| 102 | Product B | 150 | 140 | South | Good | Medium | $500 |
| 103 | Product C | 200 | 200 | East | Excellent | High | $300 |
| 104 | Product D | 90 | 100 | West | Needs Improvement | Low | $300 |
| 105 | Product E | 220 | 210 | North | Excellent | High | $500 |
| 106 | Product F | 130 | 160 | South | Needs Improvement | Medium | $300 |

**Ques8:** **Use the IF function to mark high performers. A product is a high performer if its sales are in the top 25% of all sales.**

**Solution:**

**Step1:** Create a new column(F21) named Sales Threshold.

**Step2:** By using the following formula at column F21 gives Sales threshold of top 25% products

**=PERCENTILE(C21:C26,0.75).**

**Step3:** By using the following formula at column G21 we get if the product is High Performer or Not

**=IF(C2 >= $F$21, "High Performer", "Regular").**

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| **Product** | **Sales** | **Target** | **Region** | **Sales Threshold** | **High Performer** |
| Product A | 120 | 150 | North | 187.5 | Regular |
| Product B | 150 | 140 | South | 200 | Regular |
| Product C | 200 | 200 | East | 205 | High Performer |
| Product D | 90 | 100 | West | 175 | Regular |
| Product E | 220 | 210 | North | 197.5 | High Performer |
| Product F | 130 | 160 | South | 130 | Regular |