

Excel Formula Explanation Manual

LWMA Open (F2)

Formula:

```
=LET(  
    r, ROW(),  
    w, 15,  
    v, INDEX(Data[Open], r-5):INDEX(Data[Open], r-1),  
    valid, AND(r>=7, NOT(ISBLANK(INDEX(Data[Open], r-5):INDEX(Data[Open], r-1))),  
    ISNUMBER(INDEX(Data[Open], r-5):INDEX(Data[Open], r-1))),  
    lwma, (5*INDEX(v,5) + 4*INDEX(v,4) + 3*INDEX(v,3) + 2*INDEX(v,2) + INDEX(v,1))/w,  
    IF(valid, lwma, "")  
)
```

Explanation:

This formula calculates the 5-period weighted moving average (LWMA) for the "Open" price data.

It:

- Defines the current row `r` and weight `w` for the moving average.
- Retrieves the last 5 data points from the "Open" column.
- Checks if the values are valid (not blank and are numbers).
- Calculates the weighted sum of the last 5 "Open" prices.
- If valid, returns the LWMA value; otherwise, returns a blank string.

LWMA Close (G2)

Formula:

```

=LET(
    r, ROW(),
    w, 15,
    v, INDEX(Data[Close], r-5):INDEX(Data[Close], r-1),
    valid, AND(r>=7, NOT(ISBLANK(INDEX(Data[Close], r-5):INDEX(Data[Close], r-1))),
    ISNUMBER(INDEX(Data[Close], r-5):INDEX(Data[Close], r-1))),
    lwma, (5*INDEX(v,5) + 4*INDEX(v,4) + 3*INDEX(v,3) + 2*INDEX(v,2) + INDEX(v,1))/w,
    IF(valid, lwma, "")
)

```

Explanation:

Similar to the LWMA Open formula, this calculates the 5-period LWMA for the "Close" price. It:

- Defines the current row `r` and weight `w`.
- Retrieves the last 5 data points from the "Close" column.
- Checks the validity of the values.
- Computes the weighted sum and returns the LWMA value if valid.

CrossUP (H2)

Formula:

```

=LET(
    r, ROW(),
    t, 0.0001,
    cc, INDEX(Data[LWMA Close], r-1),
    co, INDEX(Data[LWMA Open], r-1),
    pc, INDEX(Data[LWMA Close], r-2),
    po, INDEX(Data[LWMA Open], r-2),

```

```

        valid, AND(r>=8, NOT(ISBLANK(cc)), NOT(ISBLANK(co)), NOT(ISBLANK(pc)),
NOT(ISBLANK(po)), ISNUMBER(cc), ISNUMBER(co), ISNUMBER(pc), ISNUMBER(po)),
        IF(valid, IF(AND(cc>=co+t, pc<po-t), 0, ""), "")
)

```

Explanation:

This formula checks for a crossover condition where the "Close" LWMA crosses above the "Open" LWMA:

- It compares the current and previous values of both the "LWMA Close" and "LWMA Open".
- If the "LWMA Close" crosses above the "LWMA Open" and the previous "LWMA Close" was lower than the previous "LWMA Open", it signals a potential buy.

CrossDN (I2)

Formula:

```

=LET(
    r, ROW(),
    t, 0.0001,
    cc, INDEX(Data[LWMA Close], r-1),
    co, INDEX(Data[LWMA Open], r-1),
    pc, INDEX(Data[LWMA Close], r-2),
    po, INDEX(Data[LWMA Open], r-2),
        valid, AND(r>=8, NOT(ISBLANK(cc)), NOT(ISBLANK(co)), NOT(ISBLANK(pc)),
NOT(ISBLANK(po)), ISNUMBER(cc), ISNUMBER(co), ISNUMBER(pc), ISNUMBER(po)),
        IF(valid, IF(AND(cc<=co-t, pc>po+t), 0, ""), "")
)

```

Explanation:

This formula checks for a crossover condition where the "Close" LWMA crosses below the "Open"

LWMA:

- It compares the current and previous values of the "LWMA Close" and "LWMA Open".

- If the "LWMA Close" crosses below the "LWMA Open" and the previous "LWMA Close" was higher than the previous "LWMA Open", it signals a potential sell.

Predicted Close (J2)

Formula:

```
=LET(  
    r, ROW(),  
    o, INDEX(Data[Open], r-5):INDEX(Data[Open], r-1),  
    c, INDEX(Data[Close], r-5):INDEX(Data[Close], r-2),  
    valid, AND(r>=7, NOT(ISBLANK(INDEX(Data[Open], r-5):INDEX(Data[Open], r-1))),  
    NOT(ISBLANK(INDEX(Data[Close], r-5):INDEX(Data[Close], r-2))), ISNUMBER(INDEX(Data[Open],  
r-5):INDEX(Data[Open], r-1)), ISNUMBER(INDEX(Data[Close], r-5):INDEX(Data[Close], r-2))),  
    open_ws, 5*INDEX(o,5) + 4*INDEX(o,4) + 3*INDEX(o,3) + 2*INDEX(o,2) + INDEX(o,1),  
    close_ws, 4*INDEX(c,4) + 3*INDEX(c,3) + 2*INDEX(c,2) + INDEX(c,1),  
    f, (open_ws - close_ws)/5,  
    IF(valid, f, "")  
)
```

Explanation:

This formula calculates a predicted close price based on the weighted sum of the previous "Open" and "Close" prices:

- It calculates weighted values for the last 5 "Open" prices and the last 4 "Close" prices.

- The difference between these values is then averaged, producing the predicted close.

Crossover Signal (K2)

Formula:

```
=LET(  
    r, ROW(),  
    t, 0.01,  
    co, INDEX(Data[LWMA Open], r-1),  
    cc, INDEX(Data[LWMA Close], r-1),  
    po, INDEX(Data[LWMA Open], r-2),  
    pc, INDEX(Data[LWMA Close], r-2),  
    valid, AND(r>=8, NOT(ISBLANK(co)), NOT(ISBLANK(cc)), NOT(ISBLANK(pc)),  
    NOT(ISBLANK(po)), ISNUMBER(co), ISNUMBER(cc), ISNUMBER(pc), ISNUMBER(po),  
    NOT(ISBLANK(INDEX(Data[Close], r-5)))),  
    IF(valid, IF(AND(cc>co+t, pc<=po-t), "Buy", IF(AND(cc<co-t, pc>=po+t), "Sell", "")), "")  
)
```

Explanation:

This formula generates a crossover signal for a potential buy or sell:

- If the "LWMA Close" crosses above the "LWMA Open" and the previous "LWMA Close" was below the previous "LWMA Open", it signals "Buy".
- If the "LWMA Close" crosses below the "LWMA Open" and the previous "LWMA Close" was above the previous "LWMA Open", it signals "Sell".

Predicted Crossover Value (L2)

Formula:

```
=LET(  
    r, ROW(),  
    o, INDEX(Data[LWMA Open], r-1),  
    c, INDEX(Data[LWMA Close], r-1),  
    valid, AND(r>=7, NOT(ISBLANK(o)), NOT(ISBLANK(c)), ISNUMBER(o), ISNUMBER(c)),  
    p, (o+c)/2,  
    IF(valid, p, "")  
)
```

Explanation:

This formula calculates the predicted crossover value:

- It computes the average of the current "LWMA Open" and "LWMA Close" values.
- Returns the result if the values are valid; otherwise, returns a blank string.