**Tableau Formulas Reference Table (2025)**

| **Category** | **Formula Example** | **Purpose** | **Chart Application** |
| --- | --- | --- | --- |
| **Arithmetic** | [Sales] + [Profit] | Add two numeric fields | KPI cards, bar/column charts |
|  | [Price] \* [Quantity] | Calculate total revenue | Financial dashboards |
| **Logical** | IF [Sales] > 1000 THEN "High" ELSE "Low" | Categorize data into segments | Highlight tables, conditional formatting |
|  | CASE [Region] WHEN "West" THEN 1 ELSE 0 END | Flag specific regions | Filtered maps |
| **String** | LEFT([Name], 1) | Extract first letter (e.g., for initials) | Label simplifications |
|  | CONCAT([City], ", ", [State]) | Combine text fields | Tooltips, hierarchical axes |
| **Date** | DATEDIFF('day', [Order], [Ship]) | Calculate shipping time | Line charts (time analysis) |
|  | DATETRUNC('month', [Date]) | Aggregate dates by month | Trend analysis |
| **Aggregation** | SUM([Sales]) / COUNTD([Customer]) | Average sales per customer | Scatter plots, KPIs |
|  | MEDIAN([Income]) | Find median income (outlier-resistant) | Box-and-whisker plots |
| **LOD** | {FIXED [Region]: AVG([Sales])} | Regional average (ignores view filters) | Benchmark comparisons |
|  | {INCLUDE [Category]: SUM([Profit])} | Profit by category at higher granularity | Stacked bar charts |
| **Window** | WINDOW\_AVG(SUM([Sales]), -3, 0) | 3-month moving average | Trend lines |
|  | RUNNING\_SUM(SUM([Revenue])) | Cumulative revenue YTD | Area charts |
| **Statistical** | CORR([Sales], [Profit]) | Correlation coefficient (-1 to 1) | Scatter plots with R² values |
|  | STDEV([Temperature]) | Measure data dispersion | Control charts |
| **Table Calc** | PERCENT\_OF\_TOTAL(SUM([Sales])) | % contribution to total | Pie charts, waterfall charts |
|  | RANK(SUM([Sales]), 'desc') | Rank products by sales | Leaderboard tables |
| **Spatial** | MAKEPOINT([Lat], [Long]) | Convert coordinates to map points | Geographic maps |
|  | DISTANCE([Lat1], [Long1], [Lat2], [Long2], 'mi') | Calculate distance between locations | Route maps |
| **Advanced** | ZN([Profit]) / ZN([Sales]) | Handle division by zero (returns 0) | Financial ratios |
|  | PREVIOUS\_VALUE(0) + [Sales] | Running total with reset logic | Cumula |
| **Chart Type** | **Formula Example** | **Purpose** |
| **Heatmap** | SUM([Profit])/SUM([Sales]) | Color-encode profit margins |
| **Cohort Analysis** | IF NOT ISNULL(LOOKUP(ATTR([Date]), -1)) | Track customer retention over time |
| **Bullet Graph** | SUM([Sales]) / [Target] | Compare performance vs. goal |
| **Box Plot** | PERCENTILE([Sales], 0.75) | Show quartiles and outliers |
| **Parameter-Driven** | [Sales] > [Parameter] | Dynamic threshold filtering |