F&B Formulas

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Every number an operator needs on food and beverage runs through a formula, and most of those formulas live scattered across spreadsheets, supplier invoices, and half-remembered rules of thumb. This is the reference. Every calculation that matters to what you sell, what it costs you to sell it, and what it earns you, in one place.

Recipe Cost

Formula: Recipe cost = Sum of (ingredient quantity × ingredient cost per unit)

Inputs: Ingredient quantity, ingredient cost per unit

Unit: Currency

When to use: Any time you build a new menu item, change a recipe, or change a supplier's price on any ingredient.

Plate Cost

Formula: Plate cost = Recipe cost + packaging cost + waste allowance

Inputs: Recipe cost, packaging cost, waste allowance (usually a percentage)

Unit: Currency per plate

When to use: Before you price a menu item. This is the cost you must recover to break even on the plate.

Food Cost Percentage

Formula: Food cost % = (Food cost ÷ Food sales) × 100

Inputs: Food cost (beginning inventory + purchases − ending inventory), food sales

Unit: Percentage

When to use: Weekly, to track whether food cost is running above or below target.

Food Cost Variance

Formula: Variance = Actual food cost % − Target food cost %

Inputs: Actual food cost %, target food cost %

Unit: Percentage points

When to use: After each food cost % calculation, to see how far off target you are.

Theoretical vs Actual Usage

Formula: Theoretical usage = Σ (units sold × recipe quantity per unit). Actual usage = beginning inventory + purchases − ending inventory.

Inputs: Units sold, recipe quantity, inventory, purchases

Unit: Units (e.g., ounces, each)

When to use: Weekly, to find where product is leaking — waste, theft, portion creep, or recipe drift.

Inventory Turnover

Formula: Turnover = Food cost ÷ Average inventory. Average inventory = (beginning + ending) ÷ 2.

Inputs: Food cost for the period, beginning inventory, ending inventory

Unit: Turns per period

When to use: Monthly, to see how fast product moves. Higher is better; very high can mean stockouts.

Pour Cost Percentage

Formula: Pour cost % = (Beverage cost ÷ Beverage sales) × 100

Inputs: Beverage cost, beverage sales

Unit: Percentage

When to use: Weekly, separately for alcohol and non-alcohol if you sell both.

COGS to Sales Ratio

Formula: COGS to sales = Total COGS ÷ Total sales

Inputs: Total COGS (food + beverage + packaging), total sales

Unit: Ratio, usually shown as a percentage

When to use: Monthly, for the combined cost of everything you sell against total revenue.

Gross Margin Per Menu Item

Formula: Gross margin = Menu price − Plate cost

Inputs: Menu price, plate cost

Unit: Currency per item

When to use: When pricing or repricing any item, and when comparing which items to push.

Contribution Margin

Formula: Contribution margin = Menu price − Variable cost. Variable cost = plate cost + variable labor cost + variable packaging.

Inputs: Menu price, plate cost, variable labor, packaging

Unit: Currency per item

When to use: When deciding what to promote, what to cut, and where the real profit sits after variable costs.

Contribution Margin Per Labor Hour

Formula: CM per labor hour = Contribution margin ÷ Labor hours to produce

Inputs: Contribution margin, labor hours

Unit: Currency per hour

When to use: When comparing menu items that need different labor to make. This tells you which item earns more per hour of kitchen work.

Menu Engineering — Contribution Analysis

Formula: Classify each item as Star (high contribution, high volume), Plowhorse (low contribution, high volume), Puzzle (high contribution, low volume), or Dog (low contribution, low volume). High/low is set against the menu average.

Inputs: Item contribution margin, item sales volume, menu averages

Unit: Category label

When to use: Quarterly or after any menu change, to decide what to promote, reprice, redesign, or cut.

Break-Even

Formula: Break-even sales = Fixed costs ÷ Contribution margin ratio. Break-even units = Fixed costs ÷ Contribution margin per unit.

Inputs: Fixed costs, contribution margin ratio or per-unit contribution

Unit: Currency or units

When to use: When planning a new concept, a new location, or a major fixed-cost change. Tells you the sales level where you stop losing money.

Target Food Cost Pricing

Formula: Menu price = Plate cost ÷ Target food cost %

Inputs: Plate cost, target food cost percentage

Unit: Currency

When to use: As a starting point for pricing, before rounding and market check. Not the final price by itself.

Markup

Formula: Markup = (Menu price − Plate cost) ÷ Plate cost

Inputs: Menu price, plate cost

Unit: Ratio or percentage

When to use: When comparing how much each item is marked up. Useful for spotting underpriced items.

Yield Percentage

Formula: Yield % = (Usable weight after prep ÷ Purchased weight) × 100

Inputs: Usable weight after trim/waste, purchased weight

Unit: Percentage

When to use: When converting whole product into usable portions, and when adjusting recipe cost for trim loss.

As-Purchased Cost vs Edible Portion Cost

Formula: EP cost = AP cost ÷ Yield %

Inputs: As-purchased cost, yield percentage

Unit: Currency

When to use: When you buy whole product and serve a trimmed portion. The real cost of what lands on the plate is higher than what you paid per pound.

Standard Portion Cost

Formula: Standard portion cost = Recipe cost ÷ Number of portions the recipe yields

Inputs: Recipe cost, portion count

Unit: Currency per portion

When to use: When scaling a batch recipe to individual servings, and when setting the plate cost that feeds pricing.