APPENDIX C

Management Math and Formulas

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Management Math	Formula	Example
Edible Yield Factor Used to calculate edible yield from produce or meat	Edible portion (EP)÷As purchased (AP)	16 lbs. of broccoli (AP) after cleaning yield 13 lbs. (EP) 13 ÷ 16 = 81% yield
FTE Full-Time Equivalent	One person @ 8 hrs./day x 5 days/wk. x 52 wks./yr. = 2,080 hrs	If you have six employees who work full-time, you have 6 FTEs; if you have 10 employees, two work full-time, two work 3/4 time, and six work 1/2 time, how many FTEs are there? 2 x 1 FTE = 2 x 2,080 = 4,160 hours 2 x .75 FTE = 1.5 x 2,080 = 3,120 hours 6 x .5 FTE = 3 x 2,080 = 6,240 hours Total FTEs = 6.5 x 2,080 = 13,520 hours
Inventory Valuation The value of all of your inventory	Number of purchase units on hand x product price, then added together	In a cooler: 1 bag lettuce x $8/bag = $8.00 10 lbs. carrots x .39/lb. = $3.90 25 lbs. onions x .25/lb. = $6.25 Inventory Valuation = $ 18.15
Productivity Rate Used to measure the productivity of foodservice employees	A measure of work such as trays assembled ÷ measure of time	14 trays assembled in seven minutes 14 ÷ 7 = 2 minutes/tray
Recipe Cost Used to determine the cost of a standardized recipe	List of ingredients with price per amount of ingredient, added together ÷ by the recipe yield = price per portion	Recipe: Scrambled Eggs for 12 clients: 18 eggs @ $1.50/doz. ($1.50 ÷ 12 = $.125/egg) 18 x .125 = **$2.25 for 18 eggs** 1/4 cup milk @ $4.00/gal (16 cups/gal and four 1/4 cups/cup) $4.00 ÷ 16 = $.25/cup ÷ 4 = **$.0625 for 1/4 cup milk** **Total cost/client = $2.25 + .0625 = $2.31 ÷ 12 = .19/client**
Scaling a Recipe Used when increasing or decreasing the amount a recipe serves	Divide the New yield by the Original yield. Remember it by the fact that 'N' comes before 'O' in the alphabet so the formula is always N ÷ O to get the conversion factor. Then multiply the ingredients in the recipe by the conversion factor.	Let's use the Scrambled Eggs above. You want to increase this recipe to serve 50 people. 1. Determine the conversion factor: 50 ÷ 12 = **4.167** 2. Multiply that by each ingredient: 18 eggs x 4.167 = **75 eggs** .25 cup milk x 4.167 = **1 cup milk**

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Management Math	Formula	Example
Tray Accuracy Used to determine the number of errors in assembling trays	1. Count the total numbers of items on the menu ticket 2. Count the number of errors you discover on one tray 3. Divide the number of errors by the total number of items	For today's noon meal, there are seven items, including drink and condiments. You discover two errors. 2 ÷ 7 = .29 x 100 = 29%
Monthly Food Cost Used to determine food cost for the month	1. Record beginning inventory valuation 2. Add total purchases for the month 3. Subtract ending inventory valuation	For the month of June: 1. Inventory valuation as of June 1: $7,456 2. Purchases for the month of June: + $10,914 3. Subtract ending inventory on the 30th - $9,002 Monthly Food Cost: $9,368
Monthly Food Cost Percent A percentage used to track food costs and may be used to determine meal prices	1. Record the monthly food cost 2. Divide by the sales for the month (or the raw food cost PPD x number of clients)	June monthly food cost $9,368 Sales for the month: $27,398 Food cost % for June: $9,368 ÷ $27,398 = .342 x 100 or 34.2%
Turnover Rate Used as a measure of stability in the foodservice department	1. List the number of employees who have left over a defined period of time 2. Divide this by the total number of positions you have	Turnover rate for 2015: 1. 12 employees left the department in 2015 2. The total number of positions is 99 3. 12 ÷ 99 = .12 x 100 = 12%
Raw Food Cost (PPD) Per Patient Day Used as a financial measurement for tracking and benchmarking	[(Monthly Food Cost ÷ total days in the month) ÷ total clients]	June monthly food cost [($9,368 ÷ 30 days) ÷ 74 clients] = $4.22/day
Raw Food Cost Per Meal The cost of the raw ingredients to produce a meal	[(Monthly food cost from above ÷ ((the number of meals served in the month, for example: the client count x 3 meals a day x (30 days))]	June monthly food cost: [$9,368 ÷ ((74 clients x 3 meals) x 30 days)] = Cost Per Meal [$9,368 ÷ ((222 meals) x 30 days)] = Cost Per Meal ($9,368 ÷ 6,660 meals) = $1.41 Per Meal
Meals Per Labor Hour Used as a measure of productivity and for tracking and benchmarking	Total meals served ÷ total hours worked (Note: total meals served includes regular meals plus any catering)	June meals: 1. Regular meals = 6,660 meals 2. Catered meals = 154 3. Total Meals: 6,660 + 154 = 6,814 meals 4. Use a total of 485 labor hours 5. 6,814 total meals ÷ 485 total labor hours = 14 Meals Per Labor Hour

Management Math	Formula	Example
Labor Cost Per Meal Served Used as a financial measurement for tracking and benchmarking	Total labor costs ÷ total meals served	Using the example from above for total meals: (6,814) Total labor costs for June: $6,305 6,305 ÷ 6,814 = $0.93/meal
COLA Adjustment Calculating budget increase for COLA (cost of living adjustment)	1. Current budget x proposed cost of living adjustment percentage 2. Current budget + figures from above = proposed budget increase	Proposed COLA is 3.4%. Current labor budget is $78,650 per month. $78,650 x .034 = $2,674 $78,650 + $2,674 = $81,324 for next month that includes adjustment for COLA
Frequently Used Conversions		
How to Calculate Percentages	Cross multiply and divide June monthly food cost $9,368 Sales for the month: $27,398	Food cost % for June: $\frac{\$9,368}{?}$ $\frac{\$27,398}{100}$ = [(9,368 x 100) ÷ 27,398] = 34.2%
Liter –> Ounces Conversions	Quick conversions to keep in mind	1 liter = 1,000 cc's = 1,000 ml's 30 ml = 1 oz. 240 ml = 8 oz. = 1 cup
How Many Ounces In:	Quick conversions to keep in mind	1 gallon = 128 oz. 1 gallon = 4 quarts = 16 cups 1 quart = 4 cups = 32 oz. 1 cup = 8 oz.
How Many Meat Portions in a Pound	Quick conversions to keep in mind	1 lb. of raw meat = 16 oz. A standard protein portion is 4 oz. raw or 3 oz. cooked 1 lb. of meat = four portions
How Many Portions in a #10 Can	Quick conversions to keep in mind	A #10 can = 12-13 cups of product A typical serving is 1/2 cup A #10 can = approximately 25 - 1/2 cup servings
Calculate the Scoop Size	Quick conversions to keep in mind	The scoop size is equal to the number of scoops in a quart (32 oz.) There are eight half-cups in a quart (#8 scoop) There are 12 one-third cups in a quart (#12 scoop)