# Optimizing your cafeteria meal card stockpile

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As I noted when I told the story of getting one's paycheck from some mysterious pile of money, I had a colleague with a lot of money-related quirks.

Back in the early 1990's, payment for food in the Microsoft cafeterias could be made in cash, personal check, or in the form of a voucher known as a *meal card*. A Microsoft meal card was a piece of blue-gray-colored card stock that folded in half to about the size of a business card.

Microsoft®   No. 31415

— MEAL CARD —

Cash value: $27.00   Cost: $25.00

Purchaser name

Issued by

Purchaser is responsible for card, no refund if lost or stolen.
It unfolded to reveal a whole bunch of boxes.

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| $1 | $1 | $1 | $1 | $1 |
|----|----|----|----|----|
| $1 | $1 | $1 | $1 | $1 |
| $1 | $1 | $1 | $1 | $1 |
| $1 | $1 | $1 | $1 | $1 |

| 25¢ | 25¢ | 25¢ | 25¢ | 25¢ | 25¢ |
|-----|-----|-----|-----|-----|-----|
| 25¢ | 25¢ | 25¢ | 25¢ | 25¢ | 25¢ |
| 25¢ | 25¢ | 25¢ | 25¢ | 25¢ | 25¢ |
| 25¢ | 25¢ | 25¢ | 25¢ | 25¢ | 25¢ |

| 5¢ | 5¢ | 5¢ | 5¢ | 5¢ |
|----|----|----|----|----|
| 5¢ | 5¢ | 5¢ | 5¢ | 5¢ |
| 5¢ | 5¢ | 5¢ | 5¢ | 5¢ |
| 5¢ | 5¢ | 5¢ | 5¢ | 5¢ |

If you paid by meal card, then the cashier crossed out boxes that add up to your purchase amount.[1]

When you purchased a meal card, the cashier's name went into the *Issued by* (usually, an illegible scrawl), and you put your email address in the *Purchaser name*, so that if somebody found your meal card on the floor, they knew who to return it to.

As a point of reference, in 1991, a slice of pizza in the cafeteria cost a dollar, and a protein-with-vegetables entree was usually $3.25, though the fancier dishes could go up to $4.75.

You probably noticed that the cost of a meal card was $25, but the boxes add up to $27. The extra $2 was a bonus, and it's that bonus that is the subject of today's story.

In the late 1990's, Microsoft announced that it was retiring the meal card program. Instead, employees add money to an account that is linked to their employee badge. To pay for a purchase, you swipe your badge against the card reader, and it deducts the amount from your account. You can add any amount of money to your account by "loading up" at a cashier, or

by directing that a specific amount be deposited into your account from your paycheck every pay period. Existing meal cards would continue to be honored, but no new ones would be sold.

My colleague observed that the new system didn't have a $2 bonus.

He sat down and did some calculations. Assuming a specific rate of inflation, a particular rate of return on savings, and a particular rate of lunch expenses, what is the optimal number of meal cards to purchase to maximize the benefit of the $2 bonus?

On the last day of meal cards sales, he purchased a large stack of meal cards. I forget exactly how many, but it was over two dozen.

[1] If you had enough money left on your card, but not enough nickels to be able to pay exactly, cashiers could "make change" by simply writing in the amount of extra value in the margin.[2] This didn't happen often, because most items in the cafeteria cost a multiple of 25¢.

[2] In theory, you could steal 20 cents by writing your own "+20¢" in the margin of the card after all the nickels were depleted. but you didn't do that because you're an honest person.

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