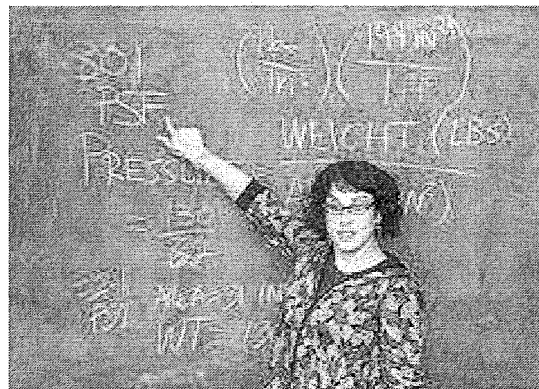


1.6 Elvira's Equations

A Solidify Understanding Task

(Note: This task refers to the same set of variables as used in *Serving Up Symbols*)

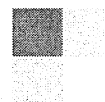


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Elvira, the cafeteria manager, has written the following equation to describe a cafeteria relationship that seems meaningful to her. She has introduced a new variable A to describe this relationship.

$$A = \frac{S}{CP}$$

1. What does A represent in terms of the school and the cafeteria?
2. Using what you know about manipulating equations, solve this equation for S . Your solution will be of the form $S = \text{an expression written in terms of the variables } A, C \text{ and } P$.
3. Does your expression for S make sense in terms of the meanings of the other variables? Explain why or why not.
4. Now solve the above equation for C and explain why the solution makes sense in terms of the variables.



Here is another one of Elvira's equations.

$$T_s = \frac{S(N_e + N_s + N_b)}{i}$$

5. What does T_s represent in terms of the school and the cafeteria?

(Hint: Elvira was really clever here. She recognized that the expression $N_e + N_s + N_b$ counted the number of *items/lunch*. She also noticed that since S represented the number of students that eat lunch each day, S also counted the number of *lunches* served. Using these new units, what would the product $S(N_e + N_s + N_b)$ mean? What would the quotient named T_s mean?)

6. Using what you know about manipulating equations, solve this equation for S .

7. Does your expression for S make sense in terms of the meanings of the other variables? Explain why or why not.

8. Now solve the above equation for N_e and explain why the solution makes sense in terms of the variables.

