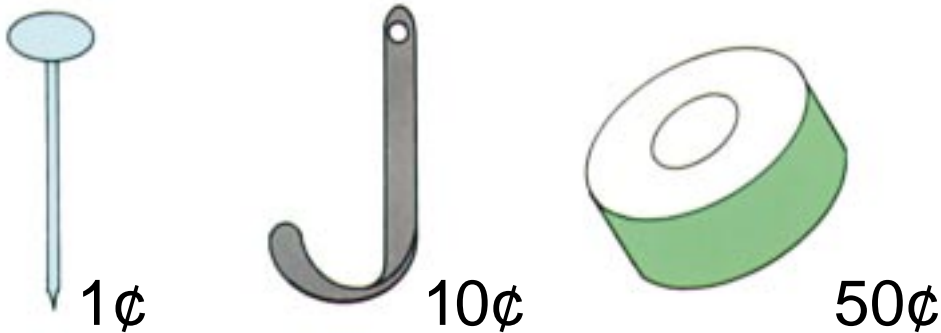


An Unusual Purchase

Problem-of-the-Week

The Problem

A customer at a hardware store bought nails that cost a penny each, hooks that cost a dime each, and electrical tape that cost a half-dollar a roll. If the customer spent exactly \$5.00 (before tax was added) and purchased 100 items, how many of each item did she buy?



Strategies and Hints

1. Use n for the number of nails, h for the number of hooks, and t for the number of rolls of electrical tape. Write two equations relating the three variables.
2. Describe the replacement set for the possible values of the variables; that is, what types of numbers make sense in the context of the problem?
3. Why might the problem seem at first to be impossible to solve?
4. Find an expression for h in terms of t that reflects the fact that h must be a positive integer.