

**MH 228, Shop at Eltad.** *Proposed by Colm Mulcahy, Spelman College.*  
How quickly can you learn the individual prices of A, B, and C?

*Solution by the **Armstrong Problem Solvers**, Armstrong Atlantic State University, Savannah, GA.*

One scan will suffice. Scan one of item C, one hundred of item B, and ten thousand of item A. If the individual prices of A, B, and C are  $uv$ ,  $wx$ , and  $yz$  cents, respectively, where  $u$ ,  $v$ ,  $w$ ,  $x$ ,  $y$ , and  $z$  are digits, then the scanner will return the total price of  $\$uvwx.yz$ , from which you can read off the individual prices. As a practical matter, however, you would need to count the items at a rate of more than 2.8 items per second in order to count out precisely ten thousand units of A and one hundred units of B in less than one hour.

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