In the multiplication problem below, A, B, C and D are different digits. What is $A + B$?

$$\begin{array}{r} ABA \\ \times \quad CD \\ \hline CDCD \end{array}$$

(A) 1 **(B)** 2 **(C)** 3 **(D)** 4 **(E)** 9

2006 AMC 8, Problem #24—
"Decompose $CDCD$ into $\overline{CD} \times 1 + 100 \times CD = CD(101)$."

Solution (A) We can decompose $CDCD$ into $CD \times 100 + CD = CD(101)$. That means that $A = 1$ and $B = 0$. The sum is $1 + 0 = 1$.

Difficulty: Hard
NCTM Standard: Number and Operations Standard for Grades 6–8: understand meanings of operations and how they relate to one another.
Mathworld.com Classification: Recreational Mathematics > Cryptograms > Cryptarithmetic