

A school store sells 7 pencils and 8 notebooks for \$4.15. It also sells 5 pencils and 3 notebooks for \$1.77. How much do 16 pencils and 10 notebooks cost?

- (A) \$4.76 (B) \$5.84 (C) \$6.00 (D) \$6.16 (E) \$6.32

2007 AMC 10 A, Problem #5—

“Set up two equations to solve for the cost of a pencil and a notebook.”

Solution

Answer (B): Let p be the cost in cents of a pencil and n be the cost in cents of a notebook. Then

$$7p + 8n = 415 \quad \text{and} \quad 5p + 3n = 177.$$

The solution of this pair of equations is $p = 9$ and $n = 44$. So the cost of 16 pencils and 10 notebooks is $16(9) + 10(44) = 584$ cents, or \$5.84.

Difficulty: Medium-easy

NCTM Standard: Algebra Standard: represent and analyze mathematical situations and structures using algebraic symbols.

Mathworld.com Classification: Algebra > Algebraic Equations > Linear Equation