

Tom's age is T years, which is also the sum of the ages of his three children. His age N years ago was twice the sum of their ages then. What is T/N ?

- (A) 2 (B) 3 (C) 4 (D) 5 (E) 6

2007 AMC 10 B, Problem #12—

2007 AMC 12 B, Problem #8—

“The sum of his three children’s ages N years ago was $T - 3N$.”

Solution

Answer (D): Tom's age N years ago was $T - N$. The sum of his three children's ages at that time was $T - 3N$. Therefore $T - N = 2(T - 3N)$, so $5N = T$ and $T/N = 5$. The conditions of the problem can be met, for example, if Tom's age is 30 and the ages of his children are 9, 10, and 11. In that case $T = 30$ and $N = 6$.

Difficulty: Hard

NCTM Standard: Number and Operations Standard for Grade 9-12: Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Mathworld.com Classification: Number Theory > Arithmetic > Addition and Subtraction
Number Theory > Arithmetic > Fractions > Proportional