

Looking for harder GMAT quant problems to prep for your pursuit of 700+? Stay tuned to this space, where over the next few weeks we'll continue to show you ways in which the GMAT can take its emphases on number properties, divisibility, and "creative algebra" to newer, harder heights. Today we offer a tricky problem solving question; enter your solutions and explanations in the comments field and we'll be back later with a detailed solution.

$0 < x < y$ and x and y are consecutive integers. If the difference between x^2 and $y^2 = 12,201$ then what is the value of x ?

- (A) 6,100
- (B) 6,101
- (C) 12,200
- (D) 12,201
- (E) 24,402

Solution:

The key to this seemingly labor-intensive problem is recognizing that you can apply the Difference of Squares rule. As the given information notes that $y^2 - x^2 = 12,201$, that also means that, by Difference of Squares:

$(y + x)(y - x) = 12,201$. And since we know that they are consecutive integers, that means that $y = x + 1$.

So, in those terms, $(2x + 1)(1) = 12201$, and so $2x = 12,200$. therefore $x = 6100$.

The correct answer is (A).