



16. The positive numbers x and y satisfy the equations $x^4 - y^4 = 2009$ and $x^2 + y^2 = 49$. What is the value of y ?
- A 1 B 2 C 3 D 4 E more information is needed

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- 16. B** Since $x^4 - y^4 = 2009$ it follows that $(x^2 + y^2)(x^2 - y^2) = 2009$.
But $x^2 + y^2 = 49$ hence $x^2 - y^2 = \frac{2009}{49} = 41$.
Subtracting gives $2y^2 = 8$ hence $y^2 = 4$. Since $y > 0$, $y = 2$.