A and B are consecutive positive integers. In the equation below, A, B and A+B represent number bases:

$$132_A + 43_B = 69_{A+B}$$

What is $A+B$?

Case 1 $B = A+1$

$$1\times A^2 + 3\times A + 2 + 4(A+1) + 3 = 6(2A+1) + 9$$

$$\Rightarrow A^2 + 3A + 5 + 4A + 4 = 12A + 6 + 9$$

$$\Rightarrow A^2 - 5A - 6 = 0$$

$$\Rightarrow (A-6)(A+1) = 0$$

$$\Rightarrow A = 6 \quad \text{or} \quad A = 1$$

$\Rightarrow A = 6$ (must be positive) and $B = 7$

So $A+B = 6+7 = 13$

Case 2 $B = A-1$

$$1\times A^2 + 3\times A + 2 + 4(A-1) + 3 = 6(2A-1) + 9$$

$$\Rightarrow A^2 + 3A + 5 + 4A - 4 = 12A - 6 + 9$$

$$\Rightarrow A^2 - 5A - 2 = 0$$

$$\Rightarrow A = \frac{5 \pm \sqrt{25 - 4(-2)}}{2} = \frac{5 \pm \sqrt{33}}{2}$$

Not possible - we need A to be an integer

So the answer is $A + B =$ (13)