Let α and β be the roots of equation $x^2 - 6x - 2 = 0$. If $a_n = \alpha^n - \beta^n$, for $n \geq 1$, then the value of $\dfrac{a_{10} - 2a_8}{2a_9}$ is equal to :

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(1) 3   (2) – 3   (3) 6   (4) – 6

Given $x^2 - 6x - 2 = 0$

$\therefore$ $a_{n+2} - 6a_{n+1} - 2a_n = 0$

$$\frac{a_{n+2} - 2a_n}{2a_{n+1}} = 3$$

Now, put $n = 8$

$$\frac{a_{10} - 2a_8}{2a_9} = 3$$