

Let m be a positive integer, $n = 2m$

Consider the sequence $1, a, a^2, \dots, a^n$

Let x be the median of the sequence

If $y = a^m$, which of the following is true:

- ① $x > y$ ② $x < y$ ③ $x = y$ ④ none of the above

$$a = -1 : 1, -1, 1, -1, \dots, (-1)^n = (-1)^{2m} = 1$$

So there are

$$\begin{array}{l} m+1 \quad 1\text{'s} \\ m \quad (-1)\text{'s} \end{array}$$

$$\Rightarrow \text{median} = 1$$

$$a^m = (-1)^m \text{ could be } 1 \text{ or } -1$$

So they're not necessarily equal

- ④ none of the above