C. I think node set 2 is the best.

Because. My criteria is the error should not be too large node set 2

The error range of node set 2 is much smaller than node set 1

D $w_j = \dfrac{1}{\prod_{\substack{i=0 \\ i\neq j}}^{n} (x_j - x_i)}$

want $w_j = (-1)^j \binom{n}{j} = \dfrac{(\frac{n}{2})^n (-1)^{n-j}}{n!} \binom{n}{j}$

$\binom{n}{j} = \dfrac{n!}{j!(n-j)!}$

$\Rightarrow \dfrac{(\frac{n}{2})^n (-1)^{n-j}}{n!} \dfrac{n!}{j!(n-j)!}$

$= \dfrac{(\frac{n}{2})^n (-1)^{n-j}}{j!(n-j)!}$

set $n-j=j$

$\dfrac{(\frac{n}{2})^n (-1)^{n-j}}{j!(n-j)!} = (-1)^j \dfrac{j^{2j}}{(n-j)!\, j!} = (-1)^j \dfrac{n!}{(n-j)!\, j!}$

$w_j = \left(\prod_{\substack{i=0 \\ i\neq j}}^{n} (-1 + \frac{2j}{n} - x_i) \right)^{-1}$

$= \left((\frac{2j}{n} - \frac{2\times 0}{n}) \times (\frac{2j}{n} - \frac{2\times 1}{n}) \cdots (\frac{2j}{n} - \frac{2\times n}{n}) \right)^{-1}$

$= \left((\frac{2j}{n}) \times \frac{2j-2}{n} \times \cdots \times \frac{(2j-2n)}{n} \right)^{-1}$

$$= \left(\frac{2^n}{n^n} \frac{j!(n-j)!}{n!} \right)^{-1}$$

$$= \left(\frac{n}{2}\right)^n \frac{n!}{j!(n-j)!} = \frac{\left(\frac{n}{2}\right)^n (-1)^{n-j}}{n!} \binom{n}{j}$$

proved