For each
$$n > 0$$
 find enabled possible value of

 $W_{n}(x) = x^{2n} + 2x^{2n-1} + 3x^{2n-2} + ... + (2n-1)x^{2} + 2n \times$
 $N = 1$
 $x^{2} + 2x \ge -1$
 $(x+1)^{2} \ge 0$
 $x' = -1$
 $x' = -1$

 $W_{\eta}(X) \rightarrow \eta = (+1)^2$. Somether

$$x^{2n} + 2x^{2n-1} + 3x^{2n-2} + ... + (2n-1)x^{2} + 2n \times$$

$$x^{6} + 2x^{5} + 3x^{4} + 4 \times^{3} + 5x^{2} + 6x + 3$$

$$x^{6} + 2x^{5} + x^{4}$$

$$2x^{4} + 4x^{3} + 2x^{2}$$

$$3x^{2} + 6x + 3$$

$$x^{4}(x+1)^{2} + 2x^{2}(x+1)^{2} + 3(x+1)^{2}$$

$$y^{3}(x) \neq 3$$

$$y^{2} + 3x^{2} + 6x + 3$$

$$y^{4}(x+1)^{2} + 2x^{2}(x+1)^{2} + 3(x+1)^{2}$$

$$y^{3}(x) \neq 3$$

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$$y^{4} + 3x^{2} + 6x + 3$$

$$y^{4} + 3x^{2} + 3x^{2} + 6x + 3$$

$$y^{4} + 3x^{2} + 3x^{2}$$

$$W_{n}(x) + y = \frac{2n - 1}{x^{2n-2}} x^{2n-2} = (x+1)^{2} x^{2n-2}$$

$$2x^{2n-2} + 4x^{2n-3} + 2x^{2n-9} = (x+1)^{2} 2x^{2n-2}$$

$$2x^{2n-2k+2} + 2x^{2n-2k+1} + 2x^{2n-2k}$$

$$2x^{2n-2k+2} + 2x^{2n-2k+1} + 2x^{2n-2k}$$

$$2x^{2n-2k+2} + 2x^{2n-2k+1} + 2x^{2n-2k}$$

$$x^{2n-2k+2} + 2x^{2n-2k+1} + 2x^{2n-2k+1}$$

$$x^{2n-2k+1} + 2x^{2n-2k+1} + 2x^{2n-2k+1}$$

Is there any contenian for should nest?

Derivatres

(niterian:

Suppose that a is a root of
$$P$$
.

$$P(a) = 0$$

then a is k -multiple root iff
$$P(a) = P'(a) = P'(a) = \dots = P^{(k-1)}(a) = 0$$

and
$$P(k)(a) \neq 0$$

as
$$k-mulfm'$$
 next off

 $(x-a)^k | P(x)$
 $(x-a)^{k+1} \nmid P(x)$

$$\frac{n=2}{a_1 + 2a_2 - a_1} \ge 2a_2$$

$$\frac{a_1 > a_2 > a_3 > 0}{a_1 > a_2 + (2a_2 - a_1)(2a_3 - a_2) > 2a_2 a_3}$$

$$\frac{a_1 a_2 + (2a_2 - a_1)(2a_3 - a_2) > 2a_2 a_3}{a_1 a_2 + (2a_2 - a_1)(2a_3 - 2a_2) > 2a_2 a_3}$$

$$2a_{1}a_{2} + 2a_{2}a_{3} \ge 2a_{2}^{2} + 2a_{1}a_{3}$$

$$a_{1}a_{2} + a_{2}a_{3} \ge a_{1}a_{3} + a_{2}^{2}$$

$$a_{1}a_{2} + a_{2}a_{3} \ge a_{1}a_{3} + a_{2}^{2}$$

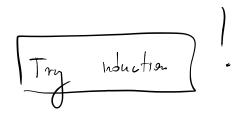
$$a_{1}a_{2} - a_{2}^{2} + a_{3}(a_{2} - a_{1}) \ge 0$$

$$a_{2}(a_{1} - a_{2}) - a_{3}(a_{1} - a_{2}) \ge 0$$

$$(\alpha_2-\alpha_3)(\alpha_1-\alpha_2) \geqslant 0$$

$$\frac{\omega_{q}}{\alpha_{1} \geq \alpha_{2} \geq \dots \geq \alpha_{n} > 0}, \quad n \geq 2$$

$$Q_1 q_2 \dots Q_{n-1} + (2q_1 - q_1)(2q_3 - q_2) \dots (2q_n - q_{n-1}) \ge$$



$$a_1 a_2 - a_k + (2a_2 - a_1)(2a_3 - a_2) - (2a_{k+1} - a_k) \ge 2a_2 a_3 - ce_{k+1}$$

$$Q = (2a_2 - a_1)(2a_3 - a_2) = (2a_k - a_k)$$

$$R = 2a_2a_3..., \alpha_r$$

We want

$$\alpha_{k}.P + (2\alpha_{k+1} - \alpha_{k})Q > \alpha_{k+1}R$$

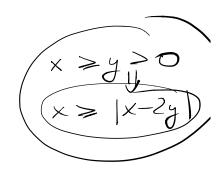
$$\alpha_1 \geqslant \alpha_2 \geqslant_{--}$$
, $\geqslant \alpha_{k+1} > 0$.

$$a_{i} \geqslant a_{i+1} \sim a_{i} \geqslant 2a_{i+1} - a_{i}$$

$$\alpha_1 \ge |2a_2 - a_1|$$

$$\alpha_2 \ge |2a_3 - a_2|$$

1



$$-x \leq -x + 2(x-y)$$
$$= x-2y < X$$

$$a_{k}.P + (2a_{k+1} - a_{k})Q \ge a_{k+1}R$$

$$WANT$$

$$a_{k}P + 2a_{k+1}Q \ge a_{k}.Q + a_{k+1}R$$

$$She P \ge Q$$

$$a_{k}P + 2a_{k}Q \ge a_{k}Q + a_{k}P + a_{k}Q$$

$$a_{k}P+2a_{k+1}Q \geqslant a_{k}\cdot Q + a_{k+1}P+a_{k+1}Q \geqslant$$

$$a_{k}P+a_{k+1}Q \geqslant a_{k}\cdot Q + a_{k+1}P$$

$$(a_{k}-a_{k+1})(P-Q) \geqslant 0 + ue$$