

10/01/20

SUBJECT:

Year:

Month:

Day:

10. Find intervals of x such that $(n^2 + 1)$

(-5)

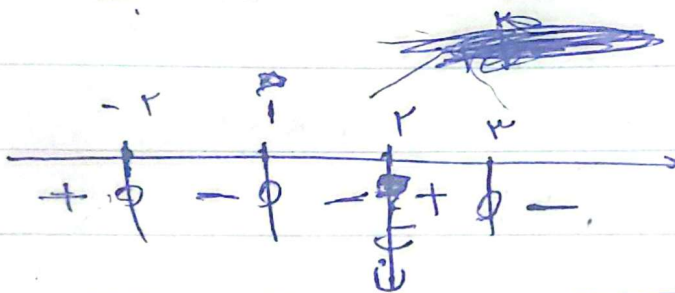
(r, ∞)



$(n^2 - r^2)(n^2 + 1)(n^2 - 1)$

$(n^2 + n + 1)(r - n)^2$

(V)



$[-r, r) \cup [r, \infty)$

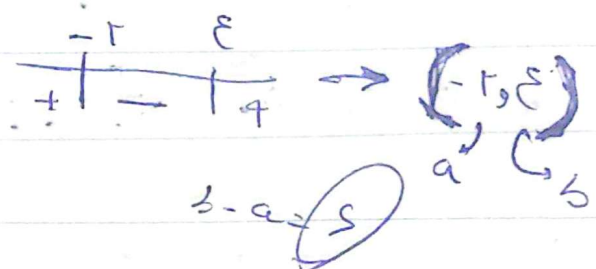
~~2(n^2 + 1)~~

(A)

$\frac{r^2 - n^2}{n^2 + 1} < 1 \rightarrow \frac{r^2 - n^2 - n^2 - 1}{n^2 + 1} < 0$

~~2(n^2 + 1)~~ $\frac{r^2 - 2n^2 - 1}{n^2 + 1} < 0$

$\frac{(2 - \epsilon)(2 + \epsilon)}{2 + \epsilon} < 0$



$$\frac{r_0 r_1 - r_0}{n(n+1)} < 0 \quad \frac{r_0}{n(n+1)} < 0 \quad \begin{matrix} (-\infty, -1) \\ (0, 0) \\ (0, \infty) \end{matrix} \quad \textcircled{9}$$

$$-1 < \frac{r_0 r_1 - r_0}{n(n+1)}$$

$$\frac{r_0 r_1 - r_0}{n(n+1)} > -1$$

$$\frac{r_0 r_1 - r_0}{n(n+1)} > -1$$

$$\frac{r_0 r_1 - r_0}{n(n+1)} > -1 \quad \textcircled{+1} \quad \frac{r_0 r_1}{n(n+1)} > 0$$

Case 2

$$\frac{r_0 r_1 - r_0}{n(n+1)} > 0 \quad \Delta = 9 - 4 < 0 \quad \textcircled{2 \text{ lines}}$$

$$\frac{r_0 r_1 - r_0}{n(n+1)} > 0 \quad \textcircled{+1} \quad (-1, \infty)$$

~~Case 1~~

$$\textcircled{1} \cup \textcircled{2} = \left(0, \frac{5}{2} \right)$$

$$\frac{(n-0)(n+1)}{n(n+1)} \frac{r_0 r_1 - l_0}{n} - \frac{r_0 r_1}{n} \leq 0 \quad \textcircled{10}$$

$$\frac{r_0 r_1 - l_0}{n} \leq 0$$

$$\Rightarrow (-\infty, -r] \cup (0, \infty)$$