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|                                                                                                                                                                                                                                                                                                                            |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| $y = \sqrt{\frac{n^2-4n}{n^2-n}}$ <p> <math>n(n-4) \rightarrow</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math><br/> <math>n(n-1)</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math> </p>                    | ۱  |
| $y = \sqrt{\frac{n^2-n^3}{n^2-n}}$ <p> <math>n^2(n^2-1) \rightarrow</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math><br/> <math>n(n^2-1) \rightarrow</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math> <math>\frac{+}{-} \frac{-}{+} \frac{+}{-}</math> </p> | ۲  |
| $y = \frac{n+1}{\sqrt{n+1n}}$ <p> <math>\rightarrow n+1 &gt; 0</math> <math>D_f = (0, +\infty)</math> </p>                                                                                                                                                                                                                 | ۳  |
| $y = \frac{1}{\sqrt{n+1n}}$ <p> <math>\rightarrow \frac{+}{-} \frac{-}{+} \frac{+}{-}</math> <math>D_f = (0, +\infty)</math> </p>                                                                                                                                                                                          | ۴  |
| $y = \sqrt{2-[n]} \rightarrow 2-[n] > 0$ $[n] < 2$ $D_f = (-\infty, 2)$                                                                                                                                                                                                                                                    | ۵  |
| $y = \frac{1}{\sqrt{2-[n]}}$ <p> <math>\rightarrow 2-[n] &gt; 0</math> <math>[n] &lt; 2</math> <math>D_f = (-\infty, 2)</math> </p>                                                                                                                                                                                        | ۶  |
| $[n-\frac{1}{2}], [n+\frac{1}{2}] \geq 0$ $[n-\frac{1}{2}+1], [n+\frac{1}{2}] \geq 1$<br>$D_f = [\frac{1}{2}, +\infty)$ $[n+\frac{1}{2}] \geq 1$ $[n+\frac{1}{2}] \geq \frac{1}{2}$ $n+\frac{1}{2} \geq 1$<br>$D_f = [\frac{1}{2}, +\infty)$                                                                               | ۷  |
| <p> <math>\rightarrow \text{if } n \in \mathbb{Z} \quad [n] + [-n] = 0 \rightarrow n - \frac{1}{2} \in \mathbb{Z}</math><br/> <math>n \in \mathbb{Z} \quad [n] + (-n) = -1 \rightarrow D_f = \{n \mid n = k + \frac{1}{2}, k \in \mathbb{Z}\}</math> </p>                                                                  | ۸  |
| $y = \frac{2}{\sin n-1}$ $\sin n-1 \neq 0$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$                                                                                                                                                                                                                                   | ۹  |
| $y = \frac{2}{2\sin^2 n-1}$ $\{ \sin^2 n-1 \neq 0$ $\sin^2 n \neq \frac{1}{2}$ $\sin n \neq \pm \frac{1}{\sqrt{2}}$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4}\}$                                                                                                                                   | ۱۰ |

$$y = \sqrt{\sin n - 1} \quad \langle \sin n - 1 \rangle \geq 0 \quad \langle \sin n \rangle \geq \frac{1}{2}$$

$$D_f = \left[ \left( \frac{\pi}{6} + 2k\pi \right) \cup \left( \frac{5\pi}{6} + 2k\pi \right) \right]$$

$$y = \cos n \Rightarrow 1 \geq \cos n \Rightarrow \cos n = 1 \quad D_f = \{2k\pi\}$$

$$\cos y = |n| - 2 \quad -1 \leq |n| - 2 \leq 1 \quad |n| - 2 \leq 1 \quad |n| \leq 3 \quad \begin{matrix} n \leq 3 \\ n \geq -3 \end{matrix}$$

$$D_f = [-3, -2] \cup [2, 3]$$

$$-1 \leq |n| - 2 \Rightarrow -1 \leq |n| \Rightarrow |n| \geq 1 \Rightarrow n \leq -1 \text{ or } n \geq 1$$

$$D_f = \left[ \frac{\pi}{2} + 2k\pi \right] \cup \left[ \frac{3\pi}{2} + 2k\pi \right]$$

$$\text{انف } n < 0 \Rightarrow n > 2 \quad \langle -\log n \rangle \geq 0$$

$$D_f = (2, 11]$$

$$\log n \leq 1 \Rightarrow n \leq 11$$

$$\Rightarrow \frac{n^2 - n}{n(n-1)} \geq 0 \quad \begin{matrix} - & + & - & + \\ \hline - & + & - & + \end{matrix} \quad D_f = (-1, 0) \cup (1, +\infty)$$

$$\text{a) } e^n + 1 \neq 0 \quad e^n \neq -1 \Rightarrow D_f = \mathbb{R}$$

$$\Rightarrow e^n - 1 \neq 0 \quad e^n \neq 1 \quad n \neq 0 \quad D_f = \mathbb{R} \setminus \{0\}$$

$$\text{b) } e^n - e \neq 0 \quad e^n \neq e \quad (e^n)^n \neq e \Rightarrow n \neq 1 \quad D_f = \mathbb{R} \setminus \{1\}$$

$$\text{c) } e^n - e \neq 0 \quad e^n \neq e \quad D_f = \mathbb{R} \setminus \{1\}$$

$$y = (e^n + 1) \quad e^n + 1 \in \mathbb{W} \quad e^n \in \mathbb{W} \quad n \in \mathbb{W}$$

$$D_f = \{n \mid n \in \mathbb{W}, k \in \mathbb{W}\}$$

$$y = \left( \frac{e^n - e}{e^n - \omega} \right) \quad \frac{e^n - e}{e^n - \omega} \in \mathbb{W} \quad e^n - e \in \mathbb{W} \quad n - \omega \in \mathbb{W}$$

$$n(e - \omega) \in e - \omega \quad n \in \frac{e - \omega}{e - \omega} = 1$$

$$n \in \frac{e - \omega}{e - \omega} = 1 \quad D_f = \left\{ n \mid n = \frac{e - \omega}{e - \omega} \right\}$$