

$$2n^2 - 4n + 9 + y^2 + 4y + m = 0$$

$$2(n^2 - 2n + 1) + y^2 + 4y + 7 = 0$$

$$2(n-1)^2 + (y+2)^2 = 0$$

$$(1, -2) \checkmark$$

$$\Rightarrow g=2 \quad m=9 \quad \sim g+m=k=11 \quad \checkmark$$

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$$a \rightarrow n^2 + 4n = 2n + a + 2$$

$$a^2 + 4a = 2a + 2$$

$$a^2 + a - 2 = 0$$

$$a = \frac{1}{1-2} \quad \forall a > 0$$

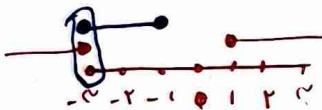
$$a=1$$

$$f(1) = (1)^2 + f(1) = 8 \quad \checkmark$$

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$$|n+1| \geq 2 \quad n+1 \geq 2 \quad n \geq 1 \quad \vee \quad n+1 \leq -2 \quad n \leq -3$$



$$\Rightarrow 2n^2 - b = a + 2n$$

$$1n - b = a - 2$$

$$\boxed{a+b=2} \quad \checkmark$$

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$$D_f = \{2\} \xrightarrow{n=2} b - 2n = 0 \quad b - 4 = 0 \quad b = 4$$

$$9n - a = 0 \quad 12 - a = 0 \quad a = 12$$

$$\frac{b}{a} = \frac{4}{12} = \boxed{\frac{1}{3}} \quad \checkmark$$

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$$y = \sqrt{\frac{n+1}{|n-2|}} + \sqrt{\frac{4-n}{n^2+2n+2}}$$

$n \geq -1$
 $n < 2$
 $n \neq 0$
 $\Delta < 0 \quad \checkmark$

$$\Rightarrow D_f = [-1, 2] - \{0\} \quad \checkmark$$

$$y = \sqrt{[n]-4} + \sqrt{2-[n]}$$

$$[n]-4 \geq 0 \quad [n] \geq 4 \quad [4, +\infty)$$

$$2-[n] \geq 0 \quad [n] \leq 2 \quad (-\infty, 2)$$

$$\Rightarrow D_f = \emptyset \quad \checkmark$$

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$$y = \sqrt{\frac{x^3 - 2x^2 - 8x + 9}{x^3 + 2x^2 - 8x - 9}}$$

$$\frac{(x-1)(x-2)(x+3)}{(x+1)(x+2)(x-2)} \geq 0 \Rightarrow \frac{-2-2-1+1+2+2}{\frac{1}{2} - \frac{1}{2} + \frac{1}{2} - \frac{1}{2} + \frac{1}{2} - \frac{1}{2}}$$

$$D_f = (-\infty, -2) \cup [-2, -1) \cup [1, 2) \cup [2, +\infty)$$

$$y = \sqrt{\frac{x^2 - x - 9}{x^2 - 10x + 25}} \quad x, -2$$

$$\frac{-2 - 2^* 2}{\frac{1}{2} - \frac{1}{2} - \frac{1}{2} + \frac{1}{2}} + \frac{2^*}{\frac{1}{2} - \frac{1}{2} - \frac{1}{2} + \frac{1}{2}}$$

$$D_f = (-\infty, -2) \cup (2, 2) \cup (2, +\infty) \quad \checkmark$$

$$y = \sqrt{[-x] - 2}$$

$$[-x] - 2 \geq 0 \quad [-x] \geq 2$$

$$D_f = (-\infty, -2] \quad \checkmark$$

$$y = \frac{8x^2 + 9}{[x]^2 - 2[x] - 3}$$

$$[x] \rightarrow 3 \quad [x] \neq 3$$

$$\left. \begin{matrix} \text{في } -1 \\ \text{في } -1 \end{matrix} \right\} \sim [x] \neq -1$$

$$\mathbb{R} - [3, 3) \quad \mathbb{R} - [-1, -1) \quad \mathbb{R} - \{E, 0\} \cup [3, 3) \quad \checkmark$$

$$y = \frac{\cot x + 1}{\tan x + 1}$$



define $\cot$ & $\tan$

$$\tan x \neq -1 \quad \mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{2} \right\}$$

$$y = \sqrt{1 - \epsilon \sin^2 x}$$

$$1 - \epsilon \sin^2 x \geq 0$$

$$\sin^2 x \leq \frac{1}{\epsilon} \sim \sin x \leq \frac{1}{\sqrt{\epsilon}} \quad \sin x \geq -\frac{1}{\sqrt{\epsilon}}$$

$$\Rightarrow D_f = \left[k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right] \left[-\frac{1}{\sqrt{\epsilon}}, \frac{1}{\sqrt{\epsilon}} \right] \quad \checkmark$$

$$y = \sqrt{1 - \log_{\frac{1}{2}}(x-1)} \quad x > 1$$

$$1 - \log_{\frac{1}{2}}(x-1) \geq 0 \quad \log_{\frac{1}{2}}(x-1) \leq 1$$

$$-\frac{1}{2} < 1 \sim x-1 \geq \frac{1}{2} \quad x \geq \frac{3}{2}$$

$$D_f = \left[\frac{3}{2}, +\infty \right) \quad \checkmark$$

$$y = \frac{\sqrt{x^2 - 1}}{1 - \log_{\frac{1}{2}} \frac{x^2 - 1}{\epsilon}} \geq 0 \Rightarrow \mathbb{R} - (0, 1)$$

$$\Rightarrow \log_{\frac{1}{2}} \frac{x^2 - 1}{\epsilon} \neq 1 \quad x^2 - 1 \neq \epsilon$$

$$x^2 - 1 - \epsilon \neq 0$$

$$\mathbb{R} - \{1, \epsilon\}$$

$$D_f = (-\infty, 0) \cup (\epsilon, \epsilon) \cup (\epsilon, +\infty) \quad \checkmark$$

$$y = \sqrt{r^{\epsilon x - x^2} - 1} \Rightarrow r^{\epsilon x - x^2} - 1 \geq 0$$

$$r^{\epsilon x - x^2} \geq 1 \quad r^x \rightarrow -x^2 + \epsilon x \geq 2$$

$$-(x^2 - \epsilon x + 2) \geq 0$$

$$\frac{1}{-1} + \frac{1}{1} = 0$$

$$D_f = [1, 2] \quad \checkmark$$

$$y = \left(\frac{r^{n+\delta}}{r^{n+\epsilon}} \right)!$$

$$D_f = \{n \mid n \in \left[\frac{-\epsilon k + \delta}{r k - r} \right], k \in \mathbb{W}\}$$

في $\mathbb{W}$, $\mathbb{W}$ $\checkmark$