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$$f(x) + g(x) = \frac{\sqrt{x + 2\sqrt{x-2}}}{(\sqrt{x-2} + 2)^2} + \frac{\sqrt{x - 2\sqrt{x-2}}}{(\sqrt{x+2} - 2)^2}$$

$$= \sqrt{x-2} + 2 + \sqrt{x-2} - 2 = 2\sqrt{x-2} \quad 2\sqrt{x-2} = a+b \quad a+c$$

$$\Rightarrow \begin{cases} a=0 \\ b=2 \\ c=-2 \end{cases} \Rightarrow \frac{a+b}{c} = \frac{1}{-1} = -1$$

$$\frac{g}{f} = \left\{ (2, -\frac{1}{2}), (1, \frac{0}{0}), (2, \frac{0}{0}), (0, \frac{2}{2} = 1) \right\}$$

$$f(x_1) \Rightarrow \left\{ (\frac{1}{2}, 2), (\frac{2}{3}, -1), (\frac{2}{3}, 2), (-\frac{1}{2}, 2) \right\}$$

$$b) f(x_2) \Rightarrow \left\{ (\pm 1, 2), (\pm \sqrt{2}, -1), (\pm 2, 2) \right\}$$

$$c) 2g^2(x) + 1 \Rightarrow \left\{ (-2, 1), (1, 2), (2, 1), (-1, 1) \right\}$$

$$d) \frac{f}{g} \Rightarrow \left\{ (1, -2), (2, -1) \right\}$$

$$h = 2f + g \Rightarrow \left\{ (2, 5), (2, 4), (2, 5) \right\}$$

$$f(x) = \sqrt{\sqrt{3x-x}} \quad , \quad g(x) = \underbrace{[x] + [-x]}_{x \in \mathbb{R}}$$

$x-2 \sim x \neq +2$

$$\left(\frac{f}{g+1} \right)(x) \rightarrow g(x) \neq -1 \rightarrow x \in \mathbb{Z}$$

$$\begin{cases} 1) 0 < x < 2 \\ 2) x \in \mathbb{Z} \\ 3) x \neq 2 \end{cases} \Rightarrow D\left(\frac{f}{g+1}\right) = \{0, 1, 2\}$$

$$f(u) = \sqrt{-u^2 + 2u - 2} \quad , \quad g(u) = \{(1, 2) (2, 2) (2, 1) (3, 1)\}$$

$$-(u-1)(u-2) \Rightarrow \frac{1}{-(u-1)(u-2)} \Rightarrow \frac{1}{-u^2 + 3u - 2}$$

$\downarrow$
 $u \rightarrow \{1, 2, 3\}$

$$h(u) = \frac{f(u)}{g(u)} = \left\{ \left(1, \frac{0}{\varepsilon}\right) \left(2, \frac{-(-1) \pm \sqrt{1 - (-1)}}{2}\right) \left(\varepsilon, \frac{\sqrt{-(-1) \cdot 0}}{\varepsilon}\right) \right\} \rightarrow \left\{ \left(1, \frac{0}{\varepsilon}\right) \left(2, \frac{\sqrt{1}}{2}\right) \left(\varepsilon, \frac{0}{\varepsilon}\right) \right\}$$

$$\text{iii) } y = \underbrace{x^{\sqrt{c}} - c x^{\sqrt{c}} + c x - 1}_{(x-1)^c} + 1 \rightarrow (x-1)^c = y-1 \rightarrow x-1 = \sqrt[c]{y-1} \\ \rightarrow x = \sqrt[c]{y-1} + 1 \rightarrow y \in \mathbb{R}$$

$$b) y = \frac{1}{x^r - r_n} \rightarrow y x^r - r_n y = 1 \rightarrow x = \frac{\sqrt{\varepsilon y^r + \varepsilon y}}{r y} \rightarrow y \neq 0$$

$$\rightarrow \varepsilon y^r + \varepsilon y > 0 \rightarrow y^r + y > 0 \rightarrow y(y+1) > 0 \rightarrow y \in (-\infty, -1) \cup (0, \infty)$$

الف) $y = x^2 - \sum x + 10 \rightarrow x_5 = 2 \rightarrow y_5 = \sum - 1 + 10 = 9 \rightarrow D_y = [9, \infty)$

$\rightarrow y = -x^2 + 9x + c \rightarrow q_5 = c \rightarrow y_5 = -9 + 11 + c = 11 \rightarrow D_y = \begin{pmatrix} -9 & 11 \end{pmatrix}$

c.) $y = \sqrt{x^2 - \varepsilon x - c} \rightarrow x_s = r \rightarrow y_s = \varepsilon - \lambda - c = -v \rightarrow Dy = \begin{bmatrix} -v, \infty \end{bmatrix} \rightarrow \mathcal{Y} = \begin{bmatrix} \lambda \\ 0, \infty \end{bmatrix}$

1) $y = \sqrt{9x - x^2} \rightarrow x_5 = 0 \rightarrow y_5 = 11 - 9 = 9 \rightarrow D_y = \begin{bmatrix} -x & 9 \end{bmatrix} \rightarrow D_y = \begin{bmatrix} 0 & 9 \end{bmatrix}$

الف) $y = u^c - \delta u^r + \tau u + 1 \rightarrow R_f = IR$

b.) $y = a^v - 9a^2 + 6a^r + r \rightarrow R_f = 4R$

2.) $y = \sqrt{u^v - 9u^r + 8u + 1} \rightarrow R_f = \sqrt{1R} \rightarrow R_f = [0, \infty)$

$$y = (x^0 - \varepsilon x^r + c_{n+1})^r \rightarrow R_f = (R)^r \rightarrow R_f = [0, \infty)$$

الف) $y = \frac{c_{n+1}}{n-2} \rightarrow R = \mathbb{R} - \{c\}$

b) $y = \frac{r_{n+1}}{n+1} \rightarrow \cancel{R} = \mathbb{R} - \{r\}$ 