

$$(1) (v)(a+1)(a+v) = va - v + a \rightsquigarrow 1fa + 1f = fa - v \rightarrow 1 \cdot a = -1 \rightsquigarrow a = -1/1$$

$$(2) \sqrt{v-v} + \frac{1}{\sqrt{v-v}} + v + \sqrt{v+v} + \frac{1}{\sqrt{v+v}} + v \rightsquigarrow \frac{1}{\sqrt{v-v}} \times \frac{\sqrt{v+v}}{\sqrt{v+v}} = \sqrt{v+v} \rightsquigarrow (\sqrt{v+v} + \sqrt{v-v})^2 = v + \sqrt{v-v} + v + \sqrt{v+v} = 1 + 2\sqrt{v} \rightsquigarrow \sqrt{v+v} + \sqrt{v-v} = \sqrt{1+2\sqrt{v}}$$

$$\rightarrow f_+(v)(\sqrt{v-v} + \sqrt{v+v}) \rightsquigarrow (v\sqrt{v} + v)$$

$$(3) \begin{cases} v f(\eta) - v f(-\eta) = f\eta^r - \alpha \\ (v f(-\eta) - v f(\eta) = f\eta^r + \alpha) \times -\frac{v}{v} \end{cases} \rightsquigarrow \begin{cases} v f(-\eta) - \frac{v}{v} f(\eta) = -\frac{1}{v} \eta^r + \frac{v}{v} \alpha \\ v f(\eta) - v f(\eta) = f\eta^r + \alpha \end{cases} \rightsquigarrow$$

$$-\frac{v}{v} f(\eta) = \frac{v}{v} \eta^r + \frac{1}{v} \alpha \rightsquigarrow f(\eta) = \left(\frac{v}{v} \eta^r + \frac{1}{v} \alpha \right) \times \left(-\frac{v}{v} \right) \rightsquigarrow f(\eta) = -f\eta^r - \frac{1}{v} \alpha$$

$$(4) \begin{cases} \text{if } \alpha = 0 \rightsquigarrow v f(0) = v m - 1 \\ \text{if } \alpha = -v \rightsquigarrow v f(0) = 1v + v m + v m - 1 \end{cases} \rightarrow 9m - v = 1v + v m \rightarrow f m = 11 \rightarrow m = f_1 v$$

$$f(0) = \frac{(v)(f_1 v) - 1}{v} = (9, 2v)$$

$$(5) \text{if } \alpha = -1 \rightsquigarrow f(-1) + f(-1) = \frac{11}{-1} = v f(-1) = -11 \rightarrow f(-1) = -9$$

$$(6) \begin{cases} D_f = 1 - \alpha \geq 0 \rightarrow 1 \geq \alpha \\ D_g = (1 - \alpha)^3 \geq 0 \end{cases} \rightsquigarrow \begin{cases} 1 - \alpha \geq 0 \rightarrow 1 \geq \alpha \\ 1 - \alpha \geq 0 \rightarrow 1 \geq \alpha \end{cases}$$

نمی‌توانیم به دست آوریم!

$$(7) \begin{cases} D_f \rightarrow \alpha \geq 0 \\ D_g \rightarrow \alpha^3 \geq 0 \rightarrow \alpha \geq 0 \end{cases} \rightsquigarrow \text{نمی‌توانیم به دست آوریم!}$$

$$(8) \begin{cases} D_f \rightarrow \alpha \geq 0 \\ D_g \rightsquigarrow \alpha - |\alpha| \geq 0 \rightarrow \alpha \geq |\alpha| \rightsquigarrow \alpha \geq 0 \end{cases} \rightsquigarrow \text{نمی‌توانیم به دست آوریم!}$$

$$(9) \text{الف) } \frac{v+1}{v-1} = (3) \quad \text{ب) } \frac{v+v}{v-v} \rightsquigarrow \text{تعریف نشده} \quad \text{ج) } 0 \times 1 = 0$$

$$(10) \text{الف) } g(\eta) = \left\{ (1, 1)(0, 4) \left(\frac{1}{v}, 0 \right) \left(-\frac{1}{v}, 2 \right) \left(\frac{4}{v}, -1 \right) \right\} \quad \text{ب) } h(\eta) = \left\{ (v, 1)(-v, 1)(0, v)(v, -1)(-v, -1) \right\}$$