

$$1) \quad r(Va + V) = -\varepsilon + Ca \rightarrow 1\varepsilon a + 1\varepsilon = Ca - \varepsilon$$

$$\rightarrow 10a = -11 \rightarrow a = -1.1$$

$$2) \quad \sqrt{2-\sqrt{c}} + \frac{1}{\sqrt{2-\sqrt{c}}} + 2 + \sqrt{2+\sqrt{c}} + \frac{1}{\sqrt{2+\sqrt{c}}} + 2 =$$

$$\sqrt{2-\sqrt{c}} + \frac{\sqrt{2+\sqrt{c}}}{\sqrt{2-\sqrt{c}} \times \sqrt{2+\sqrt{c}}} + 2 + \sqrt{2+\sqrt{c}} + \frac{\sqrt{2-\sqrt{c}}}{\sqrt{1}} + 2$$

$$= \varepsilon + 2(\sqrt{2+\sqrt{c}} + \sqrt{2-\sqrt{c}}) = \varepsilon + 2\left(\sqrt{\frac{\varepsilon+2\sqrt{c}}{2}} + \sqrt{\frac{\varepsilon-2\sqrt{c}}{2}}\right)$$

$$= \varepsilon + 2\left(\frac{1+\sqrt{c}}{\sqrt{2}} + \frac{\sqrt{c}-1}{\sqrt{2}}\right) = \varepsilon + 2\left(\frac{2\sqrt{c}}{\sqrt{2}}\right)$$

$$= \boxed{\varepsilon + 2\sqrt{2c}}$$

$$3) \quad \left. \begin{aligned} r \times r f(n) - c f(-n) &= \varepsilon n^r - n \\ r f(n) - c f(n) &= \varepsilon n^r + n \end{aligned} \right\} \rightarrow \begin{aligned} \varepsilon f(n) - \varepsilon f(-n) &= \varepsilon n^r \\ + c f(-n) - c f(n) &= \varepsilon n^r + c n \end{aligned}$$

$$\rightarrow \boxed{f(n) = -\varepsilon n^r - \frac{n}{\delta}}$$

$$4) \quad n = -r \quad (0) f(r) - c(-r) f(0) = 1 + r^m + r^{m-1}$$

$$n = r \quad r f(0) - c(r) f(r) = c^m - 1$$

$$\rightarrow f(0) = \frac{c^m - 1}{r} \quad \frac{\delta m + 1 \delta}{r} \rightarrow qm - c = \delta m + 1 \delta$$

$$\rightarrow f(0) = \frac{c^m - 1}{r} = \frac{10^m - 1}{r} \quad \boxed{4.12 \delta}$$

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$$\varepsilon m = 11 \rightarrow m = \varepsilon \delta$$

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$$5) \quad f(-1) = \frac{e + 1e + e}{-1} = -1 \quad \left[f(-1) = -9 \right]$$

$$6) \quad D_f = (-\infty, 1], D_g = (-\infty, 1] \rightarrow \text{نقطه} \checkmark$$

$$-\sqrt{(1-x)^e} = -\sqrt{(1-x)(1-x)^e} = -|1-x|\sqrt{1-x}$$

$$= -(1-x)\sqrt{1-x} = (x-1)\sqrt{1-x}$$

$$f(x) = g(x)$$

$$7) \quad D_f = [0, \infty), D_g = [0, +\infty) \rightarrow \text{نقطه}$$

$$\sqrt{x^e} = \sqrt{x(x^e)} = |x|\sqrt{x} \quad \left[\text{Ph. } f(x) = x\sqrt{x} \right]$$

$$\rightarrow f(x) = g(x)$$

$$8) \quad f(x) = \lfloor \sqrt{x} \rfloor - \lfloor \sqrt{x} \rfloor = 0 \rightarrow D_f = [0, +\infty)$$

$$g(x) = \sqrt{x-|x|} \rightarrow x > 0 \rightarrow \sqrt{x-x}/x < 0 \rightarrow \sqrt{x-x}$$

$$\rightarrow D_g = [0, \infty) \rightarrow f(x) = \sqrt{x-x} = 0$$

$$\rightarrow f(x) = g(x)$$

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9) a) $\frac{f+g}{f-g}(1) = \frac{r+1}{r-1} = \boxed{2}$ (✓)

b) $\frac{f+g}{f-g}(r) = \frac{r+r}{r-r} = \frac{2r}{0} = \boxed{\infty}$ (✓)

c) $f(0)g(-1) = (0) \times (1) = \boxed{0}$ (✓)

10) a) $g(n) = f(n-1) \rightarrow n-1 = 5 \rightarrow \underline{n=1} / n-1 = -1 \rightarrow \underline{n=0}$

$n-1 = 0 \rightarrow \underline{n=1} / n-1 = 5 \rightarrow \underline{n=6} / n-1 = 5 \rightarrow \underline{n=6}$

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$$\rightarrow f(n) = \left\{ (1, 1), (1, 2), \left(\frac{1}{2}, 2\right), \left(-\frac{1}{2}, 2\right), \left(\frac{1}{2}, -1\right) \right\}$$

جواب

1) $h(n) = f(n) \rightarrow$

$$h(n) = \left\{ (-2, 1), (2, 1), (0, 1), \left(-\frac{1}{2}, 1\right), \left(\frac{1}{2}, -1\right) \right\}$$

جواب