

کمیادف امتحانی / یازدهم دفتر A / شماره تکلیف : ۶

$$\textcircled{1} \text{ if } \begin{cases} (a+1)(x+r) & x > 1 \\ ra+rx & x < 1 \end{cases} \quad \begin{aligned} rf(u) &= f(-r) + a \\ r(a+1)(v) &= \cancel{ra-f} + a \end{aligned}$$

$$1fa+1f = \cancel{ra-f} \rightarrow 10a = -11, \quad a = \boxed{-1,1}$$

$$\textcircled{2} f(x) = \sqrt{x} + \frac{1}{\sqrt{x}} + r^*$$

$$\begin{aligned} \sqrt{r-\sqrt{r}} &\sim \sqrt{\frac{r}{r}} - \sqrt{\frac{1}{r}} = \frac{\sqrt{r}-1}{\sqrt{r}} (x\sqrt{r}) = \frac{\sqrt{r}-\sqrt{r}}{r} \} \sqrt{x} \rightsquigarrow \frac{\sqrt{r}-\sqrt{r}}{r} + \frac{\sqrt{r}}{\sqrt{r}-\sqrt{r}} = \frac{\sqrt{r}\sqrt{r} + \sqrt{r} + \sqrt{r}}{r} = \frac{\sqrt{r} + \sqrt{r}}{r} \\ \sqrt{r+\sqrt{r}} &\sim \frac{\sqrt{r} + \sqrt{r}}{r} \rightsquigarrow \sqrt{r} + r \Rightarrow \sqrt{r} + r + \sqrt{r} + r = 2\sqrt{r} + r \end{aligned}$$

$$\begin{aligned} \textcircled{3} (rf(x) - rf(-x) = rx^r - x) \cdot x^r &\rightarrow rf(x) - rf(-x) = 11x^r - rx \\ -x \cdot (rf(-x) - rf(x) = rx^r + x) \cdot x^r &\rightarrow rf(-x) - rf(x) = 11x^r + rx \end{aligned} \quad \left\{ \begin{aligned} -5f(x) &= 10x^r + x \\ f(x) &= \frac{10x^r + x}{-5} \end{aligned} \right.$$

$$\begin{aligned} \textcircled{4} x=0, \quad rf(0) &= (fx^0) = 1 + r_{m-1} \rightarrow (rf(0) = r_{m-1})^{x=0} \rightarrow -10f(0) = -10r_{m-1} \\ x=-r, \quad rf(0) &= 19 + r_m + r_{m-1} \rightarrow (rf(0) = 2m+10)^{x=r} \rightarrow 11f(0) = 10m + f_0 \\ 11f(0) &= 0 \rightarrow f(0) = \frac{0}{11} = \boxed{0} \end{aligned}$$

$$\textcircled{5} f(-1) + f(-1) = \frac{3+12+3}{-1} \rightarrow rf(-1) = -18 \rightarrow f(-1) = \boxed{-9}$$

$$⑤ f(x) = (x-1)\sqrt{1-x}$$

$$1-x \geq 0 \rightarrow 1 \geq x$$

$$D_f, D_g$$

باجه برای چند عدد با هم برابرند

$$-\sqrt{(1-x)^2} \sim \sqrt{(1-x)^2(1-x)} \sim -|1-x|\sqrt{1-x}$$

$$|1-x| \geq x$$

$$* \text{ طبق شرط } 1-x \geq x \rightarrow (1-x) = x-1\sqrt{1-x}$$

$$⑥ f(x) = x\sqrt{x} \sim D_f: x \geq 0$$

$$g(x) = \sqrt{x^3} \sim D_g: x^3 \geq 0 \rightarrow x \geq 0$$

$$\frac{x}{\sqrt{x}\sqrt{x}} \rightarrow x \geq 0 \checkmark$$

$$D_f = D_g$$

دستگاه جواب برای چند عدد با هم برابرند
مقادیر هم یکسان است

$$⑦ [\sqrt{x}] - [\sqrt{x}] \sim D_f: [0, +\infty) \rightarrow \text{دایره هم مقدار صفر$$

$$\sqrt{x-|x|} \sim x-|x| \geq 0 \sim x \geq |x| \sim D_g: [0, +\infty) \rightarrow \text{دایره هم مقدار صفر$$

همه برابر هستند

$$⑧ \frac{y+1}{y-1} = 3 \quad \text{الف)}$$

$$ج) (a)(1) = 0$$

$$ب) \frac{3+3}{3-3} = \text{تعریف نشده}$$

$$⑩ \text{ الف) } f(3x-1) \Rightarrow g(x) = \left\{ (1, 1), (0, 4), \left(\frac{1}{3}, 5\right), \left(-\frac{1}{3}, 2\right), \left(\frac{4}{3}, -1\right) \right\}$$

$$3x-1 = 2 \sim x = 1$$

$$3x-1 = -1 \sim x = 0$$

$$3x-1 = 0 \sim x = \frac{1}{3}$$

$$3x-1 = -2 \sim x = -\frac{1}{3}$$

$$3x-1 = 3 \sim x = \frac{4}{3}$$

$$ب) f(|x|)$$

$$|x| = 2 \rightarrow x = \pm 2 \quad |x| = -1 \rightarrow \text{غیرممکن} \quad |x| = 0 \rightarrow x = 0 \quad |x| = -2 \rightarrow \text{غیرممکن} \quad |x| = 3 \rightarrow x = \pm 3$$

$$h(x) = \{(-2, 1), (-1, 1), (0, 4), (-3, -1), (+3, -1)\}$$