

نام و نام خانوادگی ..... فرہام فروز زین ..... پاسخنامہ تشریحی تکلیف شماره ۱۸ کلاس ۱۰ (۵۵) پیر

$$\frac{1+\sqrt{5}}{2} \rightsquigarrow \frac{1+\sqrt{5}}{2} = \frac{5+7}{4} \rightarrow \frac{1+\sqrt{5}}{2} = \frac{4}{8} = 0.5 (1+\sqrt{5})$$

(۲)

۱

$$2a + \sqrt{2a^2 + fa} = 2 \rightarrow \sqrt{2a^2 + fa} = 2 - 2a$$

بسیار مثبت  $\rightarrow 2 - 2a \geq 0 \rightarrow a \leq \frac{2}{2}$

$$\Rightarrow 2a^2 + fa = (2 - 2a)^2 \Rightarrow 2a^2 + fa = 4a^2 - 4a + 2$$

$$\Rightarrow \sqrt{a^2 - 4a + 2} = 0 \rightarrow a = \frac{4 \pm \sqrt{16 - 4}}{2} = \frac{4 \pm 2\sqrt{2}}{2} = 2 \pm \sqrt{2}$$

$\frac{a+1}{a} = ? \rightarrow$  چون  $2 - 2a > 0 \rightarrow a < 1$   $\rightarrow \frac{2}{\sqrt{2}} + 1 = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2}$

(۲)

x

۲

طول: L  $\rightarrow \frac{\sqrt{L^2 + w^2}}{L} = \frac{1+\sqrt{5}}{2} \rightarrow \frac{L^2 + w^2}{L^2} = \frac{(1+\sqrt{5})^2}{4}$

عرض: w  $\rightarrow \frac{L^2 + w^2}{L^2} = \frac{1+\sqrt{5}}{2} + 1 \rightarrow \left(\frac{w}{L}\right)^2 = \frac{1+\sqrt{5}}{2} - 1 = \frac{\sqrt{5}-1}{2} \approx 0.61$

(۲)

x

۲

$$\frac{\sqrt{a+1}}{\sqrt{a-1} + 2} - \frac{\sqrt{a+1}}{2 - \sqrt{a-1}} = \frac{a-1}{\sqrt{a-1}} = t \Rightarrow (1 + \sqrt{3}) + 1 = 1 + \sqrt{3}$$

$$\sqrt{a+1} \left( \frac{1}{t+2} - \frac{1}{2-t} \right) = \sqrt{t^2 + 2} \times \frac{-2t}{4-t^2} = \frac{-2t\sqrt{t^2+2}}{4-t^2} = t$$

فرض  $a = y^2 \Rightarrow 2\sqrt{t^2+2} = t = 4 - t^2 \Rightarrow t^2 + 2 = 2 - t^2 \Rightarrow t^2 = 0 \Rightarrow t = 0$

(۲)

f

$$\frac{1}{\sqrt{2-a} + 2} - \frac{1}{2 - \sqrt{2-a}} = \frac{2-a}{2\sqrt{2-a}} \rightarrow \frac{2t}{t^2+2} = \frac{t}{2} \xrightarrow{t \neq 0} \frac{2}{t^2+2} = \frac{1}{2}$$

$t^2 + 2 = 4 \Rightarrow t^2 = 2 \Rightarrow t = \pm\sqrt{2}$

$\rightarrow a = 2 - 2 = 0$   $\rightarrow$  جواب: ۰

(۲)

۵

$$\frac{1}{a^r} + \frac{1}{(1-a)^r} = \frac{14}{9} \rightarrow \left(\frac{1}{a} + \frac{1}{1-a}\right)^r - r \left(\frac{1}{a(1-a)}\right) = \frac{14}{9}$$

$$\rightarrow \left(\frac{1}{a(1-a)}\right)^r - r \left(\frac{1}{a(1-a)}\right) = \frac{14}{9} \Rightarrow t^r - r t = \frac{14}{9}$$

$$\Rightarrow t^r - r t + 1 = \frac{14}{9} + 1 \Rightarrow (t-1)^r = \frac{14}{9} \Rightarrow t-1 = \pm \sqrt[r]{\frac{14}{9}}$$

$$\begin{cases} t-1 = \sqrt[r]{\frac{14}{9}} \\ t-1 = -\sqrt[r]{\frac{14}{9}} \end{cases} \Rightarrow t = 1 \pm \sqrt[r]{\frac{14}{9}} \rightarrow \frac{14}{9} - \frac{10}{9} = \frac{4}{9} = \left(\frac{2}{3}\right)^2 \checkmark$$

(2)  
6

$$\sqrt{a} + \sqrt{-a^r + ra^r + r^2 a - 1} + \sqrt{a^r + \sqrt{-a^r + ra^r - 1}} = a + r$$

$$\Rightarrow a^r - ra^r - r^2 a + 1 \leq 0 \rightarrow f \leq a \leq 0$$

$$\Rightarrow a(a-r)(a-f) \leq 0 \rightarrow r \leq a \leq f$$

بجزه اول  $\rightarrow$   $a \leq f$   $\rightarrow \sqrt{f} + \sqrt{14} = r + f = 9 \rightarrow a = f$   $\rightarrow$  جواب  $\rightarrow$   $a = f$

(2)  
7

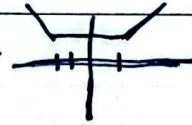
$$y = |a+r| + |a-1| \rightarrow$$


Abbildung  $\sqrt{(r+t)^2 + (d-v)^2} = \sqrt{f} = r\sqrt{5}$   
 $(r, d), (-f, v)$

$$y + a = 11$$

$$\Rightarrow ① = (a+r) + (a-1) = 2a+1 \rightarrow r(2a+1) + a = 11 \rightarrow \forall a = 1f \rightarrow a = 5$$

$$\Rightarrow ② = -r \leq a \leq 1 \rightarrow y = (a+r) + (1-a) = r+1 \rightarrow a = 1 \rightarrow$$

$$\Rightarrow ③ = a < -r \rightarrow y = -(a+r) + (1-a) = -r a - 1 \rightarrow -r(-ra-1) + a = 11 \Rightarrow a = f$$

(2)  
8

$$y = \sqrt{a^r - fa + f} = |a-r| \xrightarrow{1f} a > r \rightarrow a-r \rightarrow \frac{1}{r} a + r = a-r \rightarrow a = \Lambda$$

$$y = \frac{1}{r} a + r \xrightarrow{1f} a < r \rightarrow \frac{1}{r} a + r = r-a \rightarrow a = 0$$

نیز  $\frac{r+f}{r} \times \Lambda = f \times \Lambda = 32$

$$\rightarrow r=0 \rightarrow \frac{1}{r}(r)(r) = r \rightarrow 1\Lambda + r = r$$

$$\rightarrow \Lambda = r \rightarrow \frac{1}{r}(4)(4) = 1\Lambda \Rightarrow \sqrt{a^r - fa + f} = 11 - r = 12 \checkmark$$

(2)  
9

$$\frac{1}{B} + \frac{1}{F} = \frac{1}{r} \Rightarrow \frac{1}{B} + \frac{1}{B+9} = \frac{1}{r} \rightarrow \frac{rB+9}{B(B+9)} = \frac{1}{r}$$

$$\Rightarrow f \cdot B + 1\Lambda = B^r + 9B \rightarrow B^r - r/B - 1\Lambda = 0$$

$$\rightarrow B = \frac{r+1}{r}$$

$$\Rightarrow \frac{r+1}{r} = \frac{r+1}{r} \Rightarrow 34 \checkmark$$

(2)  
10