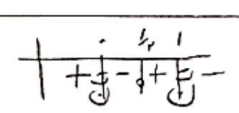
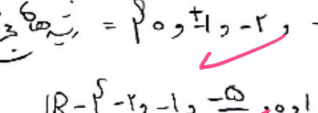
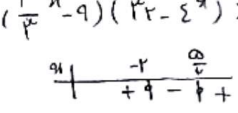


۲. آفین عالی نوشتن

نام و نام خانوادگی شماره کلاس یازدهم B دفتر

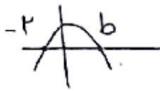
الف) $f(x) = \sqrt{\frac{1+x^2-2x-x^2}{x(x-1)}} \rightarrow \frac{1-2x}{x(x-1)} \geq 0$ 
 $D_f = (-\infty, 0) \cup [1, 2)$

ب) $f(x) = \frac{\frac{1}{x+1} - \frac{2}{x}}{\frac{3}{x-1} + \frac{1}{x+2}} = \frac{\frac{x-2x-2}{x(x+1)}}{\frac{3x+4x+2}{(x-1)(x+2)}} = \frac{-x-2}{\frac{7x+2}{(x-1)(x+2)}}$ 
 $D_f = (-\infty, -2) \cup (-\frac{5}{7}, 0)$

الف) $f(x) = \sqrt{((\frac{1}{x})^x - 9) \cdot (x^2 - 2x)}$ $\frac{1}{x^x} = 9 \rightarrow x = -2$ $(\frac{1}{x^x} - 9)(x^2 - 2x) \geq 0$
 $D_f = (-\infty, -2] \cup [\frac{2}{x}, +\infty)$ 

ب) $\sqrt{x-1} + \sqrt{y-2} = 3 \rightarrow \sqrt{y-2} = 3 - \sqrt{x-1}$ $\Rightarrow x-1 \geq 0 \rightarrow x \geq 1$ $D_f = [1, 17]$
 $\hookrightarrow 3 - \sqrt{x-1} \geq 0 \rightarrow 3 \geq \sqrt{x-1} \xrightarrow{\text{square}} 9 \geq x-1 \rightarrow x \leq 10$

$f(x) = \frac{\log(x^2 - x - 2)}{x}$ $x^2 - x - 2 > 0$ $\rightarrow \frac{x-2}{x+1} > 0$ $D_f = (-\infty, -1) \cup (2, +\infty)$
 $\frac{1}{x} \geq 0 \rightarrow x > 0$ $\rightarrow \frac{x-2}{x+1} > 0$ $D_f = (2, +\infty)$

$x^2 + (2-b)x - 2b$ $b, -2$ 
 $-(x+2)(x-b) = -x^2 - (2-b)x - 2b$
 $\frac{2-b}{-2} = a$ $2b = 3 \rightarrow b = \frac{3}{2}$ $a = -\frac{1}{2}$
 $a+b = -\frac{1}{2} + \frac{3}{2} = 1$
 سوال مرصفت!

$g(x) = \sqrt{f(x) - x} \rightarrow f(x) - x \geq 0 \rightarrow f(x) \geq x$
 $x \geq 1 \rightarrow \frac{x^2-2}{x} \geq x \rightarrow x^2-2 \geq x^2 \rightarrow -2 \geq 0$ (False)
 $x < 1 \rightarrow \frac{x^2-2}{x} \geq x \rightarrow x^2-2 \geq x^2 \rightarrow -2 \geq 0$ (False)
 $D_f = [-2, +\infty)$

$$f(x) = x^r - \varepsilon x \rightarrow r \left(\frac{\sqrt{r}}{r} + 1 \right)^r - \varepsilon \left(\frac{\sqrt{r}}{r} + 1 \right)$$

$$\frac{r}{r} + 1 + r\sqrt{r} - r\sqrt{r} - \varepsilon = \frac{-1}{r}$$

$$f\left(\sin \frac{\pi}{r} + \cos \frac{\pi}{r}\right)$$



$$f(x) = \frac{x+1}{x-1} \rightarrow f(a) = \frac{a+1}{a-1} \rightarrow f(f(a)) = \frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1} = \frac{ra}{a-1}$$

$$\frac{a(a-1)}{a-1} = a \rightarrow \mathbb{R} - \{1\}$$

$$a \neq 1$$

$$f(g(a)) = -\varepsilon \quad g(x) = \sqrt{x^r - 1} \quad f(x) = x^r - \varepsilon x$$

$$g(a) = \sqrt{a^r - 1}$$

$$f(\sqrt{a^r - 1}) = \left(\frac{\sqrt{a^r - 1}}{t} \right)^r - \varepsilon \left(\frac{\sqrt{a^r - 1}}{t} \right) = -\varepsilon \rightarrow t^r - \varepsilon t + \varepsilon = 0 \rightarrow (t-r)^r = 0 \rightarrow t = r$$

$$\sqrt{a^r - 1} = r \rightarrow a^r - 1 = r^2 \rightarrow a = \pm \sqrt[r]{r^2 + 1}$$

$$f(x) \times f(-x) = \sqrt{r} \times \sqrt{r} = 1 \varepsilon \varepsilon$$

$$x + r = \varepsilon \rightarrow x = 1$$

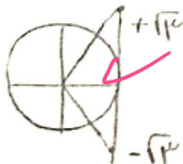
$$x + r = -r \rightarrow x = -4$$

$$f(x) = (1)^r - \omega(1) + 4 = r$$

$$f(-r) = (-4)^r - \omega(-4) + 4 = \sqrt{r}$$

$$f(x) = x^r - \omega x + 4$$

$$f(r, \omega) = t a t^r x = (\pm \sqrt{r})^r = r$$



$$r \cos^r x + \omega \cos x = r^2 \omega$$

$$r \cos^r x + \omega \cos x - r^2 \omega = 0$$

$$\cos^r x + \omega \cos x - 1 \varepsilon = 0$$

$$(\cos x - 1)(\cos x + 1) = 0$$

$$\cos x = \frac{r}{r} = \frac{r}{r} \times$$

$$x = r k \pi + \frac{\pi}{r}$$

$$x = r k \pi - \frac{\pi}{r}$$