

$$2x^2 + y^2 - 4x + 4y + k = 0 \quad k = ?$$

$$2((x-1)^2) + (y+2)^2 = 2x^2 - 4x + 2 + y^2 + 4y + 4 = 0 \Rightarrow k = 9 + 2 = 11$$

if $x=1$
 $y=-2$

$$f(x) = \begin{cases} x^2 + 4x & ; x \geq 1 \\ x^2 + 6x + 5 & ; x < 1 \end{cases} \quad (0,0) \quad f(1) = ?$$

if $x=1$
 $1^2 + 4(1) = 5$

$(1+2)(1-1) = 0 \Rightarrow a = -2 < 1$
 $a > 0 \Rightarrow a = 1$

$$f(x) = \begin{cases} x^2 + 4x & ; x \geq 1 \\ x^2 + 6x + 5 & ; x < 1 \end{cases}$$

$f(1) = ?$
 $1^2 + 6(1) + 5 = 12$

$$f(x) = \begin{cases} 2x^2 - b & ; |x+1| \geq 1 \\ a + 4x & ; -1 < x < 1 \end{cases}$$

$a+b = ?$

if $x=-1$

$1 - b = a - 4 \Rightarrow a+b = 5$

if $x=1$

$2(-1)^2 - b = a + 4(-1)$
 $2 - b = a - 4 \Rightarrow a+b = 6$

$$y = \sqrt{4x-a} + \sqrt{b-4x} \quad df = 1$$

$\frac{b}{a} = ?$

$4x-a \geq 0 \Rightarrow x \geq \frac{a}{4}$
 $a=12$

$b-4x \geq 0 \Rightarrow x \leq \frac{b}{4}$
 $b=4$

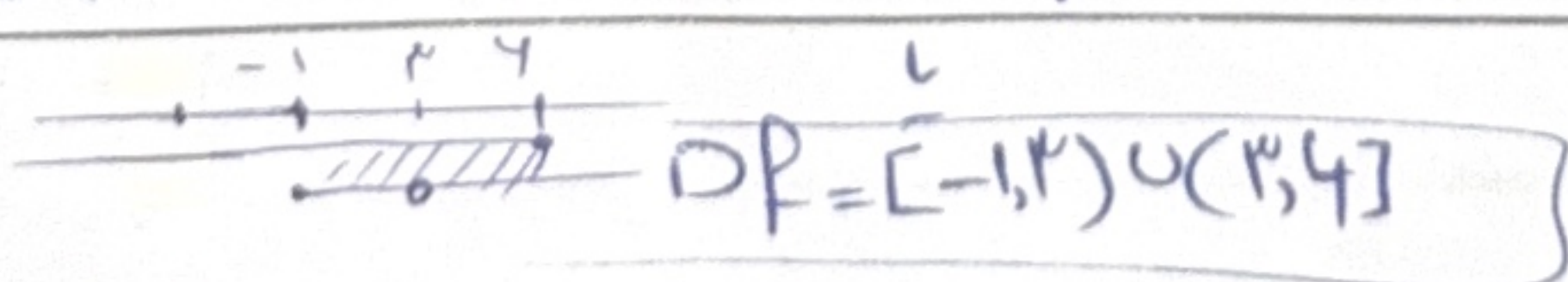
$\frac{b}{a} = \frac{4}{12} = \frac{1}{3}$

الف) $y = \sqrt{\frac{x+1}{x-3}} + \sqrt{\frac{4-x}{2x+4}} = 0$

ب) $\sqrt{x-4} + \sqrt{4-x} = 0$

$\frac{x+1}{x-3} \geq 0 \Rightarrow x \in (-1, 3) \cup (3, +\infty)$
 $\frac{4-x}{2x+4} \geq 0 \Rightarrow x \in (-2, 4]$
 $df = [-1, 4] \cup (3, 4]$

$\sqrt{x-4} \geq 0 \Rightarrow x \in [4, +\infty)$
 $\sqrt{4-x} \geq 0 \Rightarrow x \in (-\infty, 4]$
 $df = \emptyset$



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$$\begin{array}{ccccccc}
 -\infty & -2 & -1 & 1 & 2 & \infty \\
 + & - & + & - & + & - & + \\
 0 & & 0 & & 0 & & 0
 \end{array}$$

$$F = (-\infty, -4) \cup [-2, -1) \cup [1, 2) \cup [3, +\infty)$$

$$\mathcal{D}_f = (-\infty, -r]$$

$$\Gamma(\mu, f) \hookrightarrow [1, 0)$$

$$D_f = \mathbb{R} - \{ [-1, 0) \cup [1, 1) \}$$

$$\frac{\sin x}{\cos x} \quad \cos x \neq 0 \rightarrow k\pi + \frac{\pi}{2}$$

$$I_2 = IR - \int \frac{k\pi}{r}, k\pi - \frac{\pi}{F} y$$

$$\log_{\frac{1}{r}} x^{-1} \leq 1 \Rightarrow \frac{x-1}{x^{\frac{1}{r}}} \leq \frac{1}{r}$$

$$x-17 \Rightarrow x \geq 11 \quad \Rightarrow \left[\frac{1}{r}, +\infty \right)$$

$$\frac{x^2 - \mu_x}{x(x - \mu)} \cdot \frac{\mu}{\mu - 1} = \frac{\mu}{\mu - 1} \cdot \frac{x^2 - \mu_x}{x(x - \mu)}$$


 $\rightarrow \psi = (-\omega, -1) \psi(-1, 0) \psi$
 $(\psi, t) \psi(t, +\infty)$

$$\frac{(x-1)(x-1)}{x-1}$$

$$\phi = [1, \kappa]$$

$$x(r_w - \mu) = \delta - Fw \Rightarrow x = \frac{\delta - Fw}{r_w - \mu}$$

$$Df = \int x |x| = \frac{-1}{k-1}, k \in \mathbb{N}$$

$$\frac{1}{s} \rightarrow \frac{1}{s} \rightarrow \frac{-k+0}{k-0} \rightarrow \frac{-k+0}{k-0}$$