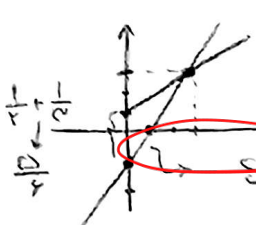


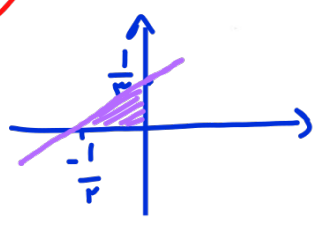
۵

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ... کلاس: ...

$y = \frac{3x-1}{2} \rightarrow x = \frac{2y+1}{3} \rightarrow \frac{2x+1}{3} = y$ ✓



$S = \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{12}$

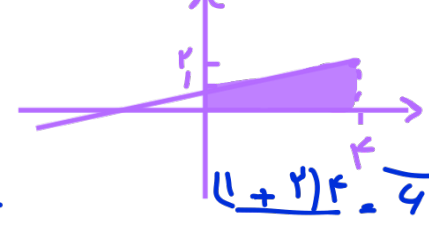


$S = \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{12}$

الف) $y = x^2 - 2x + 3$
 $z = \frac{x^2}{2} = \frac{1}{2}(x-1)^2 + \frac{1}{2}$
 $y_s: 1 - 2 + 3 = 2$
 $y = (x-2)^2 + 1 \rightarrow x = (y-2)^2 + 1$
 $\sqrt{x-1} + 1 = y \rightarrow f^{-1}(u) = \sqrt{u-1} + 1$
 $D_f: \mathbb{R} \rightarrow D = R_f = [2, +\infty)$

ب) $x^2 - 2x + 3 = y \rightarrow x^2 - 2x + 3 - y = 0$
 $\Delta = 4 - 4(3-y) = 4y - 8$
 $y \geq 2$
 $y = (x-2)^2 + 1 \rightarrow x = (y-2)^2 + 1$
 $\sqrt{x-1} + 1 = y$
 $D_f: \mathbb{R} \rightarrow D = R_f = [2, +\infty)$

$f(u) = 2u - \sqrt{4 - (4u + 4u^2)}$
 $f(u) = 2u - 2|u-2|$
 $\rightarrow u > 2 \rightarrow f(u) = 4$
 $\rightarrow u \leq 2 \rightarrow f(u) = 4 - 4u$
 $\rightarrow f^{-1}(u) = \frac{u}{4} + 1$
 $D_f = R_f = (-\infty, 4]$



$(1+2)^2 = 4$

$y_1 = \frac{x_1}{\sqrt{x_1^2 - 5}}$
 $y_2 = \frac{x_2}{\sqrt{x_2^2 - 5}}$
 $\rightarrow \frac{x_1}{x_2} = \frac{\sqrt{x_1^2 - 5}}{\sqrt{x_2^2 - 5}} \rightarrow \frac{x_1^2}{x_2^2} = \frac{x_1^2 - 5}{x_2^2 - 5}$

فصل ۳ و ۵ جزوه ت

$(x^2 - 2x + k) > -\frac{(x^2 + 4x + 4)}{4} + 12k$
 $-12 > 2k \rightarrow -6 > k \rightarrow (-\infty, -6)$

مساوی معمم میباید باشد!

$$|y| = |3x + |x|| \rightarrow |y| = f|x| \rightarrow |y| = \varepsilon y - 12x \rightarrow 12x = \varepsilon y - |y| \rightarrow \frac{1}{\varepsilon} y - |y| = 2$$

$$y = 3x + |x| \rightarrow |x| = y - 3x$$

$$f(x) = \begin{cases} 3x & x \geq 0 \\ x & x < 0 \end{cases}$$

$$f^{-1}(x) = \begin{cases} \frac{x}{3} & x \geq 0 \\ \frac{x}{2} & x < 0 \end{cases}$$

$$y = \frac{1}{\varepsilon} x - |x| \quad \text{از دو طرف } \rightarrow \begin{cases} (a+b)x & x \geq 0 \\ (a-b)x & x < 0 \end{cases} \quad \begin{cases} a = \frac{1}{\varepsilon} & b = -1 \\ a+b = \frac{1}{\varepsilon} \rightarrow a = \frac{\varepsilon}{\varepsilon+1} \\ a-b = \frac{1}{\varepsilon} \rightarrow b = -\frac{1}{\varepsilon+1} \end{cases}$$

$$ab = -\frac{\varepsilon}{\varepsilon+1}$$

$$f^{-1}(x) = \frac{-mx + \varepsilon}{x - 1^2} \rightarrow f^{-1} = \frac{1^2 x + \varepsilon}{x - 1^2} \rightarrow f \circ f^{-1} = \frac{3 \left(\frac{1^2 x + \varepsilon}{x - 1^2} \right) + \varepsilon}{\frac{1^2 x + \varepsilon}{x - 1^2} - 1^2} \rightarrow$$

$$f(x) = \frac{k}{x+m} \rightarrow 1 = -1 - m \rightarrow 1^2 = -m \rightarrow m = -1^2$$

$$f \circ f^{-1} + f^{-1} = 1^2 x + \frac{1^2 x + \varepsilon}{x - 1^2} \rightarrow \frac{1^2 x^2 - 1^2 x + \varepsilon}{x - 1^2} = -x$$

$$1^2 x^2 - 1^2 x + \varepsilon = -x^2 + 1^2 x - 1^2 x^2 - 1^2 x + \varepsilon$$

$$f \circ f^{-1}(x) = x \quad \text{جواب پانزدهم}$$

$$f(x, y) = t \xrightarrow{f^{-1}} x, y = f^{-1}(t) \rightarrow x = \frac{3 - f^{-1}(t)}{2}$$

$$g\left(\frac{x}{2}\right) = 1 - t \xrightarrow{g^{-1}} \frac{x}{2} = g^{-1}(1 - t) \rightarrow x = 2g^{-1}(1 - t)$$

$$\frac{3 - f^{-1}(t)}{2} = 2g^{-1}(1 - t) \xrightarrow{t=1^2} 3 - f^{-1}(1) = 4g^{-1}(0) \xrightarrow{\text{جواب}}$$

$$\text{قرینه نسبت به مبدأ: } -y = \frac{-\Delta u - 1^2}{1 + u} \rightarrow y = \frac{\Delta u + 1^2}{1 + u}$$

$$\text{واحد به راست: } \frac{\Delta(u-1) + 1^2}{1 + (u+1)} = \frac{\Delta u + 1^2}{u-1} \quad \frac{1^2 u + 4}{u-1} = \frac{u+4}{u-1} \rightarrow$$

$$\text{واحد به چپ: } \frac{\Delta u + 1^2}{u-1} - 1^2 = \frac{1^2 u + 4}{u-1} \rightarrow f^{-1}(u) = \frac{u+4}{u-1} \quad S = \frac{-b}{a} = 3$$

$$y = x + f(x) \rightarrow \{y\} = \{x + f(x)\} \rightarrow \{y\} = \omega[x] \rightarrow \{y\} = \frac{\omega}{\varepsilon} x (y-x)$$

$$f(x) = \frac{y-x}{\varepsilon} \rightarrow y = x + \frac{y-x}{\varepsilon} \rightarrow x = y - \frac{y-x}{\varepsilon} \rightarrow y = x - \frac{f(x)}{\varepsilon}$$

$$f - g = x + f(x) - \left(x - \frac{f(x)}{\varepsilon}\right) = f, \wedge(x)$$

ادامه سوال ۷

چون گفته ایم که $n=5$ است!

$$f \circ f^{-1}(x) + f^{-1}(x) = 5$$

$$x + \frac{3x+4}{x-3} = 5 \rightarrow \frac{3x+4}{x-3} = 0 \rightarrow x = \boxed{-\frac{4}{3}}$$