

۱۴، ۷۵

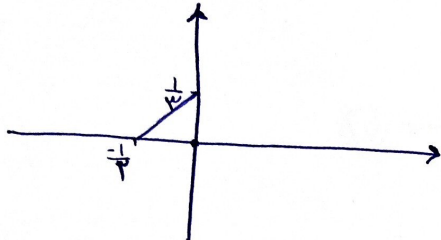
نام و نام خانوادگی آریا طالبی پاسخنامه تشریحی تکلیف شماره ۵ کلاس دوازدهم ریاضی ۱

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

$$x=0 \rightarrow y = \frac{1}{3}$$

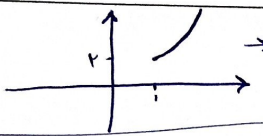
$$y=0 \rightarrow x = -\frac{1}{2}$$

$$S = \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$$



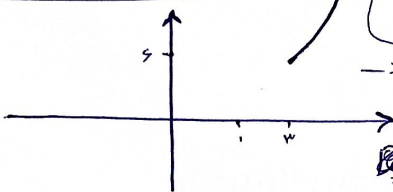
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الف) $y = x^2 - 2x + 3 = (x-1)^2 + 2 \rightarrow y - 2 = (x-1)^2$



$$1 + \sqrt{y-2} = x \rightarrow y = 1 + \sqrt{x-2}$$

ب) $y \geq 1$



$$y = x^2 - 2x + 3 \rightarrow x = 1 \pm \sqrt{y-2}$$

$$x \geq 2 \rightarrow x = 1 + \sqrt{y-2} \rightarrow y = 1 + \sqrt{x-2}$$

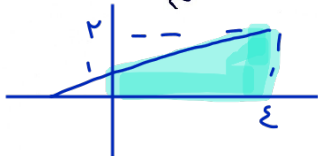
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$$f(x) = 2x - \sqrt{16 - 8x + 4x^2} = 2x - \sqrt{(2x-4)^2} = 2x - |2x-4|$$

$$y = 4x - 4 \rightarrow \frac{y+4}{4} = x \rightarrow y = \frac{x+4}{4}$$



مساحت ناحیه P' با جهت مبدا محاسبه می شود!

$$S = \frac{4(1+4)}{2} = 10$$

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$$x_1 \rightarrow y_1, \quad y_1 = y_2 \rightarrow \frac{x_1}{\sqrt{x_1^2 - a}} = \frac{x_2}{\sqrt{x_2^2 - a}} \rightarrow \frac{x_1^2}{x_1^2 - a} = \frac{x_2^2}{x_2^2 - a} \rightarrow \frac{x_1^2}{-a} = \frac{x_2^2}{-a}$$

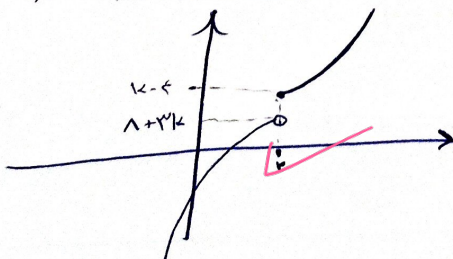
چنین چیزی امکان پذیر نیست زیرا $x_1 > x_2$ و جانشین می شود.

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$$y = \frac{x^2}{x^2 - a} \rightarrow x^2 = \frac{ay^2}{y^2 - 1} \rightarrow x = \pm \sqrt{\frac{ay^2}{y^2 - 1}}$$

$$y = \pm \sqrt{\frac{ay^2}{x^2 - 1}}$$

$$x^2 - 4x + k \geq -x^2 + 4x + 3k \quad x=2 \rightarrow 4 - 8 + k \geq -4 + 8 + 6k \rightarrow 2k \leq -12 \rightarrow k \leq -6$$



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$$f(x) = \begin{cases} x & x \geq 0 \\ 2x & x \leq 0 \end{cases} \rightarrow y = x \rightarrow x = \frac{y}{1} \rightarrow y = \frac{x}{1}$$

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$$y = \frac{2x}{1} \rightarrow x = \frac{y}{2} \rightarrow y = \frac{x}{2}$$

$$ab = \frac{3}{x} \times \frac{1}{x} = \frac{3}{x^2}$$

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

$$f(x) = 0 = \frac{x + 5}{x + m} \rightarrow -x - m \geq 1 \rightarrow m \geq 1$$

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$$y = f \circ f^{-1}(n) + f^{-1}(n) = x + f^{-1}(n) = x \rightarrow f^{-1}(n) = 0 \rightarrow f(0) = x \rightarrow x = \frac{0 + 5}{0 + 1} = 5$$

$$f(n) = \frac{3n + 2}{n - 5} \xrightarrow{a+d} f(n) = f^{-1}(n) \rightarrow f \circ f^{-1}(n) = n$$

$$f \circ f^{-1}(n) = f^{-1}(n) = n \rightarrow \frac{3n + 2}{n - 5} = 0 \rightarrow n = -\frac{2}{3}$$

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

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

$$t = -2 \rightarrow \frac{3 - f^{-1}(-2)}{2} = 2g^{-1}(2) \rightarrow g^{-1}(2) + f^{-1}(-2) = 4$$

$$y = -\frac{-2x - 13}{1 - (-x)} = \frac{2x + 13}{x + 1} \xrightarrow{x=2} \frac{2(2) + 13}{2 + 1} = \frac{19}{3}$$

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$$\frac{2x + 13}{x - 1} = 13 \rightarrow \frac{2x - 13}{1 - x} = \frac{2x + 13 + 3x - 13}{x - 1} = \frac{5x}{x - 1} \rightarrow 5x = -2x + 13 \rightarrow 7x = 13 \rightarrow x = \frac{13}{7}$$

$$\rightarrow 13x = 13 \rightarrow x = 1 \rightarrow \frac{2n + 3}{n - 1} = \frac{2n + 4}{n - 1} \rightarrow f^{-1}(n) = \frac{n + 4}{n - 1}$$

$$f(n) = f^{-1}(n) \rightarrow \frac{2n - 5}{n - 4} = 5 \rightarrow S = -\frac{5}{2}$$

$$f(n) = y = x + f[x] \rightarrow [y] = [x + f[x]] \rightarrow [y] = [x] + [f[x]] = 2[x] \rightarrow [x] = \frac{1}{2}[y]$$

$$y = x + f[x] \rightarrow x = y + f[y] \rightarrow x = y + f\left(\frac{1}{2}[y]\right) \rightarrow y = x - \frac{1}{2}[y]$$

$$(f - g)(x) = x + f[x] + x - \frac{1}{2}[x] = 2x - \frac{1}{2}[x]$$

$$x + f[x] - x + \frac{1}{2}[x] = \frac{1}{2}[x]$$