

Date

دارد هم از B شخصی مدرسی

Subject

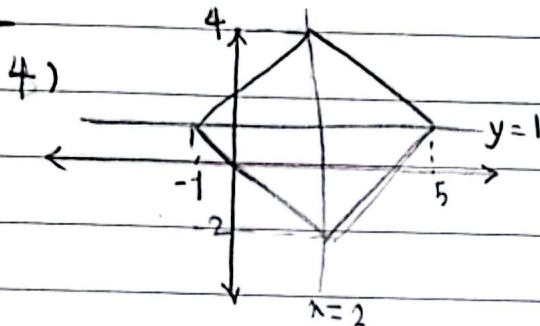
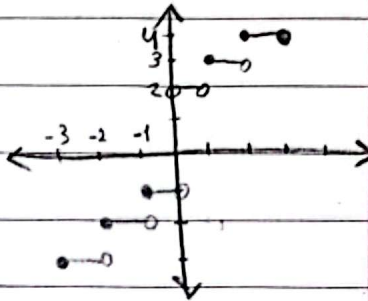
کد تکلیف ۶:

$$1) \text{ الف) } 2 \sin^2 \left(\pi + \frac{\pi}{3} \right) - 1 \rightarrow 0 \leq \sin^2 \left(\pi + \frac{\pi}{3} \right) \leq 1 \xrightarrow{-1} \frac{x^2}{-1}$$

$$-1 \leq 2 \sin^2 \left(\pi + \frac{\pi}{3} \right) - 1 \leq 1$$

$$\text{ب) } 3 \cos^3 \pi - 4 \rightarrow -1 \leq \cos^3 \pi \leq 1 \xrightarrow{-4} -7 \leq 3 \cos^3 \pi - 4 \leq -1$$

$$2) \frac{n}{|n|} + [n] \rightarrow \begin{cases} -3 \leq n < 0 \rightarrow [n] - 1 \\ 0 < n \leq 3 \rightarrow [n] + 1 \end{cases}$$

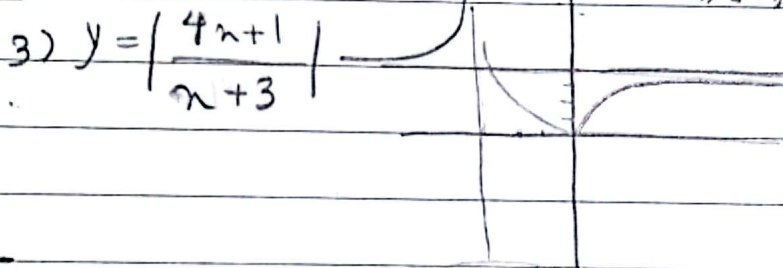


$$x \geq 2, y \geq 1 \rightarrow -x + 6 = y$$

$$x \leq 2, y \geq 1 \rightarrow x + 2 = y$$

$$x \leq 2, y \leq 1 \rightarrow y = -x$$

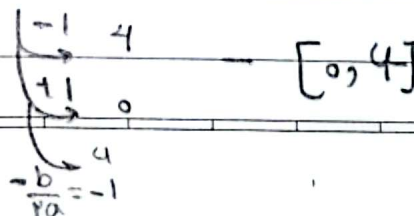
$$x \geq 2, y \leq 1 \rightarrow y = x - 4$$



$$5) \text{ الف) } x + \frac{1}{x} + 2 \rightarrow \left(\frac{x+1}{x} \right)^2 \geq 2 \rightarrow (t+1)^2 - 1$$

$$= (t)(t+2) \xrightarrow{\sqrt{2}} \sqrt{2} \times (\sqrt{2}+2) \rightarrow [2+2\sqrt{2}, +\infty)$$

$$\text{ب) } (3 - \sin x)(1 + \sin x) = -\sin^2 x + 2 \sin x + 3$$



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6) $f(n) = \frac{-1}{3}n + 10$ — $D_f = \{1, 2, 3, \dots, 9\}$ $\hookrightarrow$ $R_f = \left\{ \frac{29}{3}, \frac{28}{3}, 9, \frac{26}{3}, \frac{25}{3}, 8, \frac{23}{3}, \frac{22}{3}, 7 \right\} \rightarrow \text{جمع} = 75$

7) $a=0$ — $[1, +\infty)$ $\hookrightarrow$ $\sqrt{ax^2+bx+c} = f(x)$
 $f(2)=0 \rightarrow 2b+c=0$
 $f(3)=1 \rightarrow 3b+c=1$ $\rightarrow b=1, c=-2$
 $g(x) = \sqrt{x^2+4} \rightarrow R_{x^2+4} \rightarrow [4, +\infty) \sqrt{}, [2, +\infty)$

8) $H(x) = \frac{x(x^2-4)}{x+2}$ $D_f = R - \{a, b\}$, $R_f = [c, +\infty) - 8$

$\hookrightarrow \frac{x(x+2)(x-2)}{(x+2)} = x(x-2) = 8 \rightarrow x^2 - 2x - 8 = 0$

$(x-4)(x+2) = 0 \rightarrow x \neq 4, -2$

$C = y_s \rightarrow x_s = +2 \rightarrow y_s = 1(1-2) = -1$ $b > a$

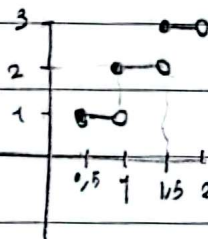
$f\left(\frac{a+b}{2c}\right) = f\left(-\frac{1}{2}\right) = 3$

9) $y = \sqrt[3]{x^3 + ax^2 + bx - 8}$ $D_y = [a, b]$ $R_y = ?$

$(x-2)^3 = x^3 - 6x^2 + 12x - 8 \rightarrow [-6, 12]$

$(x-2)^3 = -6$ $\rightarrow R_y = [-8, 10]$

10) $y = \left[2\right] + \left[2 + \frac{1}{2}\right] \rightarrow \left[\frac{1}{2}, 1\right]$
 $\left[1, 1.5\right]$
 $\left[1.5, 2\right]$



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