$\Rightarrow 4an + 4a + 2b = 6n + b \Rightarrow 3a = 6 \rightarrow a = 2 \Rightarrow 4a + 2b = b \Rightarrow 8 + 2b = b \Rightarrow \underline{b = -8}$

پاسخ تمرین تصویری:

1) $a(2x+1)+b+a(n+2)+b = 3n + \cancel{a} \; 2a+b \Rightarrow 2an + a + b + an + 2a + b = 3n + 2a + b$

$3an + 3a + 2b = 3n + 2a + b \Rightarrow 3a = 3 \Rightarrow a = 1 ,\; 3a + 2b = 2a + b \Rightarrow \underline{b = 0}$

$f(n) = n \Rightarrow \sqrt{n - n^2} \Rightarrow -n^2 + n \rightarrow -\frac{b}{2a} = \frac{-1}{-2} = \frac{1}{2} \Rightarrow -\left(\frac{1}{2}\right)^2 + \frac{1}{2} = \frac{1}{2} - \frac{1}{4} = \frac{1}{4} \Rightarrow R = (-\infty, \frac{1}{4}]$

$\sqrt{} \Rightarrow R = [0, \frac{1}{2}]$ ج

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2) $\frac{n^3 - 4n}{n+2} = \frac{n(n^2-4)}{n+2} = \frac{n(n-2)\cancel{(n+2)}}{\cancel{n+2}} \rightarrow n \neq -2 \Rightarrow n(n-2) \Rightarrow n(n-2) = 8 \Rightarrow \cancel{n = -4}$

$\Rightarrow n^2 - 2n - 8 = 0 \rightarrow (n-4)(n+2)$

$\left.\begin{matrix} n \neq 4 \\ n \neq -2 \end{matrix}\right\} \Rightarrow a + b = 4 - 2 = 2 \Rightarrow n^2 - 2n \rightarrow -\frac{b}{2a} = \frac{2}{2} = 1 \Rightarrow 1 - 2 = -1 \Rightarrow c = -1$

$f\left(\frac{2}{-2}\right) = f(-1) = -1(-1-2) \Rightarrow -1(-3) = 3$

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3)

$\left.\begin{matrix} a^3 + a^2 + ab - 8 = 0 \\ b^3 + ab^2 + b^2 - 8 = 0 \end{matrix}\right/ \Rightarrow$ جمع ⇒ $\sqrt[3]{(x-2)^3} \Rightarrow \sqrt[3]{n^3 - 8 + 12n - 6n^2} \Rightarrow$

$\underline{a = -6} \,/\, \underline{b = 12} \Rightarrow n - 2 \Rightarrow n \in [-6, 12] \rightarrow n - 2 \in [-8, 10] = R_f$

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4)

$\frac{n+1}{1-n} > 0 \rightarrow (-1, 1) \Rightarrow \frac{an^2 - 1}{n^2 + b} \rightarrow n^2_{min} = 0 \rightarrow \frac{-1}{b}$ ، $n^2_{max} = +\infty \rightarrow a$ $\Rightarrow (-\frac{1}{b}, a) = (-1, 1)$

$a = 1$

$-\frac{1}{b} = -1 \rightarrow b = 1$

$\boxed{a + b = 2}$

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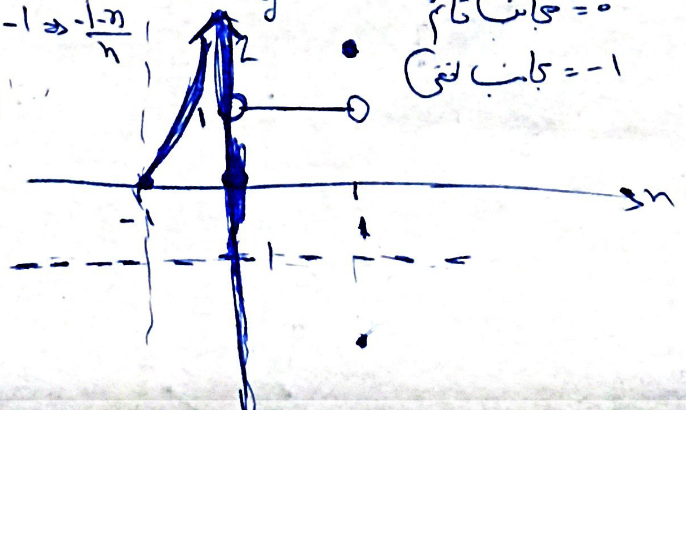
5)

$n \in [-1, 0) \Rightarrow -\frac{1}{n} + \left(\frac{-n}{n}\right) \Rightarrow -\frac{1}{n} - 1 \Rightarrow \frac{-1-n}{n}$

$n \in [0, 1) \Rightarrow \frac{\ln l}{n} = 1$

$n \in \{1\} \Rightarrow 1 + 1 = 2$



حد چپ = 0

حد راست = -1

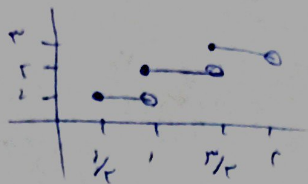
6)

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

$x\in[\frac{1}{2},1) \Rightarrow [x]=0 \Rightarrow y=1$

$x\in[\frac{3}{2},2) \Rightarrow [x]=1 \Rightarrow y=3$

$x\in[1,\frac{3}{2}) \Rightarrow [x]=1 \Rightarrow y=2$

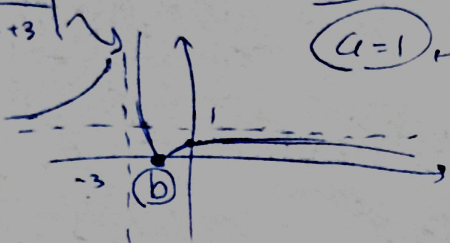
$\Rightarrow$  $\rightarrow$ گزینه ۳

7)

$\left|\frac{x+1}{ax+3}\right| \Rightarrow -1 <$ مجانب افقی $< 1 \Rightarrow -1 \le \frac{1}{a} \le 1 \Rightarrow a\in[-1,1] \Rightarrow$ (۲) حالت در نظر میگیریم ① $\Rightarrow a=1$ ② $\Rightarrow a=-1$

حالت های ممکن غیرقابل قبول هستند ← شرط ← زیر b ← (الف)

در نتیجه ← حالت اولی ⇐ ① ← $\frac{1}{a}=1$ ← $a=1$

$\left|\frac{x+1}{x+3}\right|$  $\Rightarrow \left|\frac{x+1}{x+3}\right|=1 \rightarrow x+1=-x-3 \rightarrow 2x=-4 \rightarrow x=-2$

$b=-2$ ← داریم

$a-b=1-(-2)=3$ جواب آخر

8) $|x-2|+|y-1|=3 \Rightarrow$ ① $\Rightarrow x-1>0 \Rightarrow x>1$

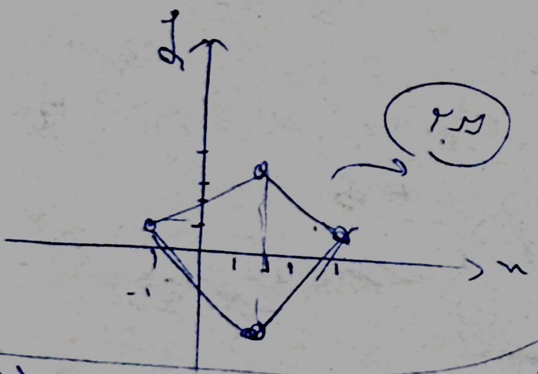
$\Rightarrow y-1>0 \Rightarrow y>1 \Rightarrow y=-x+6$

② $x-2<0 \rightarrow x<2$

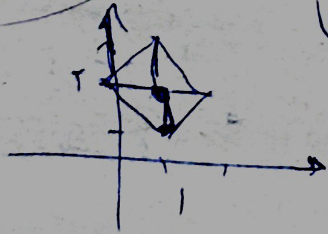
$y-1>0 \rightarrow y>1 \rightarrow y=x+2$

③ $x-2<0,\ y-1<0 \rightarrow y=-x$

④ $x-2>0,\ y-1<0 \rightarrow y=x-4$

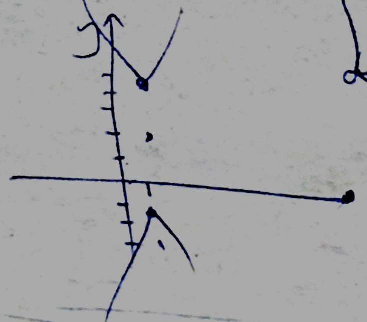


مربع

9) الف) $|x-1|+|y-2|=1 \Rightarrow$ 

ب) $|x-1|-|y-2|=-3$

$|y-2|-|x-1|=3$



قانون تاج مدار

10)

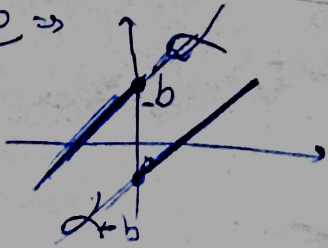
$y=3x+|ax+b| \Rightarrow$

$ax+b>0 \Rightarrow 3x+ax+b \Rightarrow (3+a)x+b \Rightarrow$

$ax+b<0 \rightarrow 3x-ax-b \rightarrow (3-a)x-b$

$X \rightarrow a=0, b=0 \rightarrow y=3x$ ✓

$\Rightarrow [-3,3]$



$(3-a)x-b<-b$

$\Rightarrow x<3 \Rightarrow$ $x<3$

$(3+a)(x)>0$

$a>-3$