

$\rightarrow 3an + 3a + 2b = 4n + b \Rightarrow 3a = 4 \Rightarrow a = \frac{4}{3} \Rightarrow 3a + 2b = b \Rightarrow 4 + 2b = b \Rightarrow b = -4$ 2. انحراف!

1) $a(x+r) + b + a(n+r) + b = rn + \cancel{ra} + b \Rightarrow ran + a + b + an + ra + b = rn + ra + b$

$ran + ra + b = rn + ra + b \Rightarrow ra = r \Rightarrow a = 1, ra + b = ra + b \Rightarrow b = 0$

$f(n) = x \Rightarrow \sqrt{n - n^2} \Rightarrow -n^2 + n \Rightarrow \frac{-b}{2a} = \frac{-1}{-2} = \frac{1}{2} \Rightarrow \left(\frac{1}{2}\right)^2 + \frac{1}{2} = \frac{1}{4} + \frac{2}{4} = \frac{3}{4} \Rightarrow R = (-\infty, \frac{3}{4}]$

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

2) $\frac{x^2 - 5x}{n+2} = \frac{n(n^2 - 5)}{n+2} = \frac{n(n-r)(n+r)}{n+2} \xrightarrow{(1)} \frac{n \neq -r}{n+2} \Rightarrow n(n-r) \Rightarrow n(n-r) = 1 \Rightarrow n = 1$

$\frac{n^2 - 5n}{n+2} = 0 \Rightarrow (n-5)(n+2) = 0 \Rightarrow n = 5 \text{ or } n = -2$
 $\frac{n^2 - 5n}{n+2} = 1 \Rightarrow n^2 - 5n = n + 2 \Rightarrow n^2 - 6n - 2 = 0 \Rightarrow n = \frac{6 \pm \sqrt{36 + 8}}{2} = \frac{6 \pm \sqrt{44}}{2} = 3 \pm \sqrt{11}$

$f\left(\frac{5}{-2}\right) = f(-2) = -1(-2-2) = -1(-4) = 4$ ✓

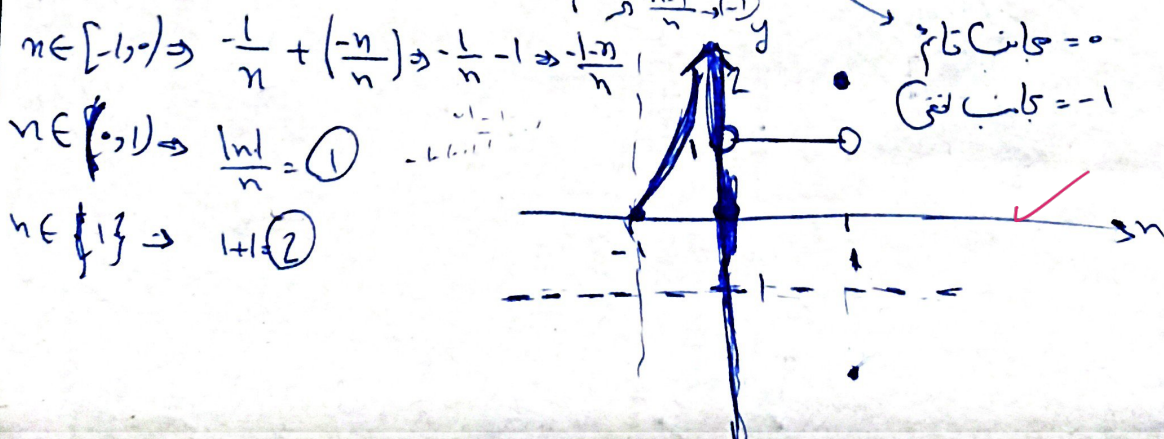
3)

$a^2 + a + ab - 1 = 0$
 $b^2 + ab + b^2 - 1 = 0$
 $\frac{a = -1}{b = 1} \Rightarrow n = 2 \Rightarrow n \in [-1, 1] \rightarrow n - 2 \in [-1, 1] = R$ ✓

4)

$\frac{x+1}{1-x} > 0 \Rightarrow \frac{-1}{-1-x} \Rightarrow (-1, 1) \Rightarrow \frac{an-1}{n+b} \Rightarrow \frac{n}{n+b} \Rightarrow \frac{n}{n+b} = 1 \Rightarrow n = n+b \Rightarrow b = 0$
 $\frac{a+b=2}{a=1} \Rightarrow b=1$ ✓

5)

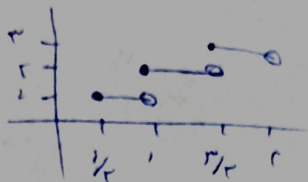


$$y = \lfloor n \rfloor + \lfloor n + \frac{1}{2} \rfloor$$

$$n \in [\frac{1}{4}, 1) \Rightarrow \lfloor n \rfloor = 0 \Rightarrow y = 1$$

$$n \in [\frac{3}{4}, 1) \Rightarrow \lfloor n \rfloor = 1 \Rightarrow y = 2$$

$$n \in [1, \frac{5}{4}] \Rightarrow \lfloor n \rfloor = 1 \Rightarrow y = 2$$



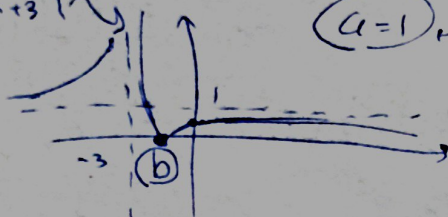
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v)

$$\left| \frac{x+1}{a(n+3)} \right| \Rightarrow -1 < \frac{x+1}{a(n+3)} < 1 \Rightarrow \frac{x+1}{a(n+3)} < 1 \Rightarrow a(n+3) > x+1 \Rightarrow a \in [-1, 1] \Rightarrow \textcircled{1} \Rightarrow a=1 \text{ و } \textcircled{2} \Rightarrow a=-1$$

$$\left| \frac{x+1}{a(n+3)} \right|$$



۱) $a=1$

$$\frac{1}{a} = 1$$

۱) $a=-1$

$$b=-2$$

$$a-b = 1 - (-2) = 3$$

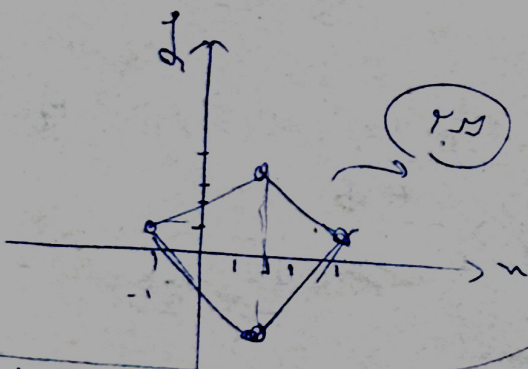
$$1) |n-1| + |y-1| = 3 \Rightarrow \textcircled{1} \Rightarrow n-1 > 0 \Rightarrow n > 1 \Rightarrow y-1 > 0 \Rightarrow y > 1 \Rightarrow y = -n+7$$

$$\textcircled{2} \quad n-1 < 0 \Rightarrow n < 1 \Rightarrow y-1 > 0 \Rightarrow y > 1 \Rightarrow y = n+2$$

$$\textcircled{3} \quad n-1 < 0 \Rightarrow n < 1 \Rightarrow y-1 < 0 \Rightarrow y < 1 \Rightarrow y = -n$$

$$\textcircled{4} \quad n-1 > 0 \Rightarrow n > 1 \Rightarrow y-1 < 0 \Rightarrow y < 1 \Rightarrow y = n-6$$

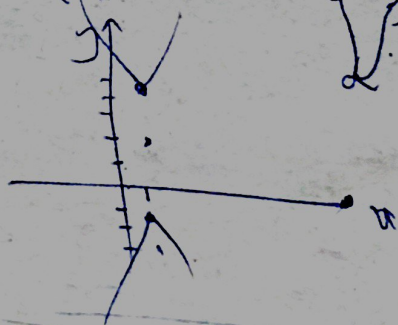
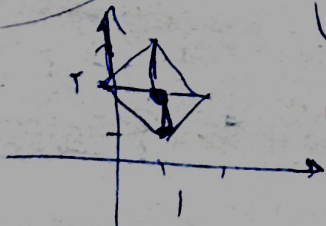
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$$|n-1| + |y-1| = 3$$

$$|y-1| + |n-1| = 3$$

$$a) \textcircled{1} |n-1| + |y-1| = 1$$



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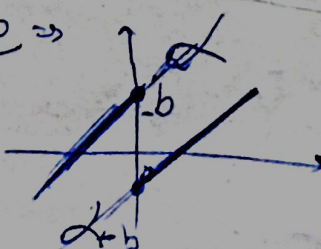
۱۰)

$$y = \lfloor n \rfloor + \lfloor an+b \rfloor$$

$$an+b > 0 \Rightarrow \lfloor an+b \rfloor = an+b$$

$$an+b < 0 \Rightarrow \lfloor an+b \rfloor = an+b-1$$

$$x \rightarrow a=0, b=0 \Rightarrow y = 3n \Rightarrow [-3, 3]$$



$$\begin{aligned} (n-a)(n-b) &= n^2 - (a+b)n + ab \\ \Rightarrow \lfloor n \rfloor (3) &\Rightarrow \frac{(n-a)(n-b)}{a > -3} \end{aligned}$$