

1)

$$\Rightarrow (x, 3) \Rightarrow -\frac{1}{x} \underbrace{(n-x)^2}_{\text{مربع}} + 3 \Rightarrow -\frac{1}{x} (n-x)^2 + 3 = 0 \Rightarrow (n-x)^2 = 4 \Rightarrow n-x = \pm 2$$

$n = 5$
 $n = 1$

2)

$$f(n) \Rightarrow f(1) = 1 \Rightarrow \frac{n+1}{n-1} = 1 \Rightarrow n = -\frac{1}{3} / 1 - f(b) = 1 - f(1) = 1 - 1 = 0 \Rightarrow -\frac{1}{3} = \frac{1}{3}$$

3)

$$x = \sqrt{x(n+1)} \Rightarrow \sqrt{x(n+1)-3} + 1 \Rightarrow \sqrt{x(n+1)+2} = \frac{1}{x} \Rightarrow \sqrt{x(n+1)} = \frac{1}{x} \Rightarrow x(n+1) = \frac{1}{x^2} \Rightarrow n = \frac{1}{x^2} - 1$$

4)

$$\Rightarrow a \in [n-1, \infty) \Rightarrow a \in [n, \infty) \Rightarrow (a+1, \infty) / -1 \in [n+1, \infty) \Rightarrow -1 \in [n, \infty) \Rightarrow [n, \infty)$$

$$\Rightarrow (-1, \infty) \Rightarrow b-1 = \infty \Rightarrow b = 1 \Rightarrow a+1 = -2 \Rightarrow a = -3 \Rightarrow -3-1 = -4$$

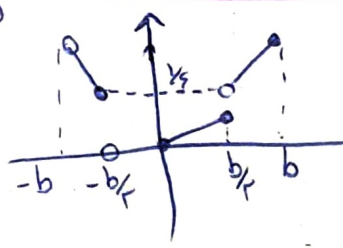
5)

$$x \in [-3, \infty) \Rightarrow \frac{x}{2} \in [-\frac{3}{2}, \infty) \Rightarrow \frac{x}{2} + 1 \in [-\frac{1}{2}, \infty) \Rightarrow D_f(x) = \emptyset$$

$$R \Rightarrow [-1, 1] \Rightarrow x^2 \Rightarrow [-1, 1] \Rightarrow -1 \Rightarrow [-1, 1] \Rightarrow [0, 1] \Rightarrow \sqrt{x} \Rightarrow [0, 1]$$

(1, 1) ← قوس مفتوحة

6)



$$\Rightarrow \frac{n}{a} [an] \Rightarrow \frac{n}{b} [\frac{1}{b}n] \Rightarrow \frac{b}{a} [\frac{1}{b}n] \Rightarrow \frac{b}{a} [\frac{1}{b}n] = \frac{b}{a} \cdot \frac{1}{b}n = \frac{n}{a}$$

$$\Rightarrow \frac{b}{a} [\frac{1}{b}n] = \frac{b}{a} \cdot \frac{1}{b}n = \frac{n}{a} \Rightarrow \frac{b}{a} = \frac{1}{a} \Rightarrow b = 1$$

$$\Rightarrow b-a \Rightarrow 1-(-1) = 2$$

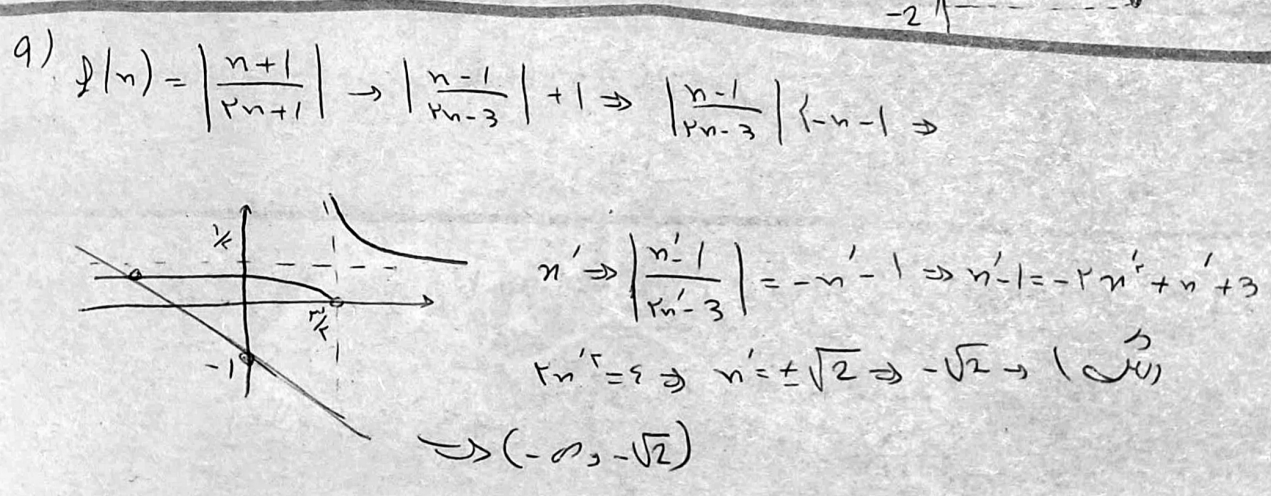
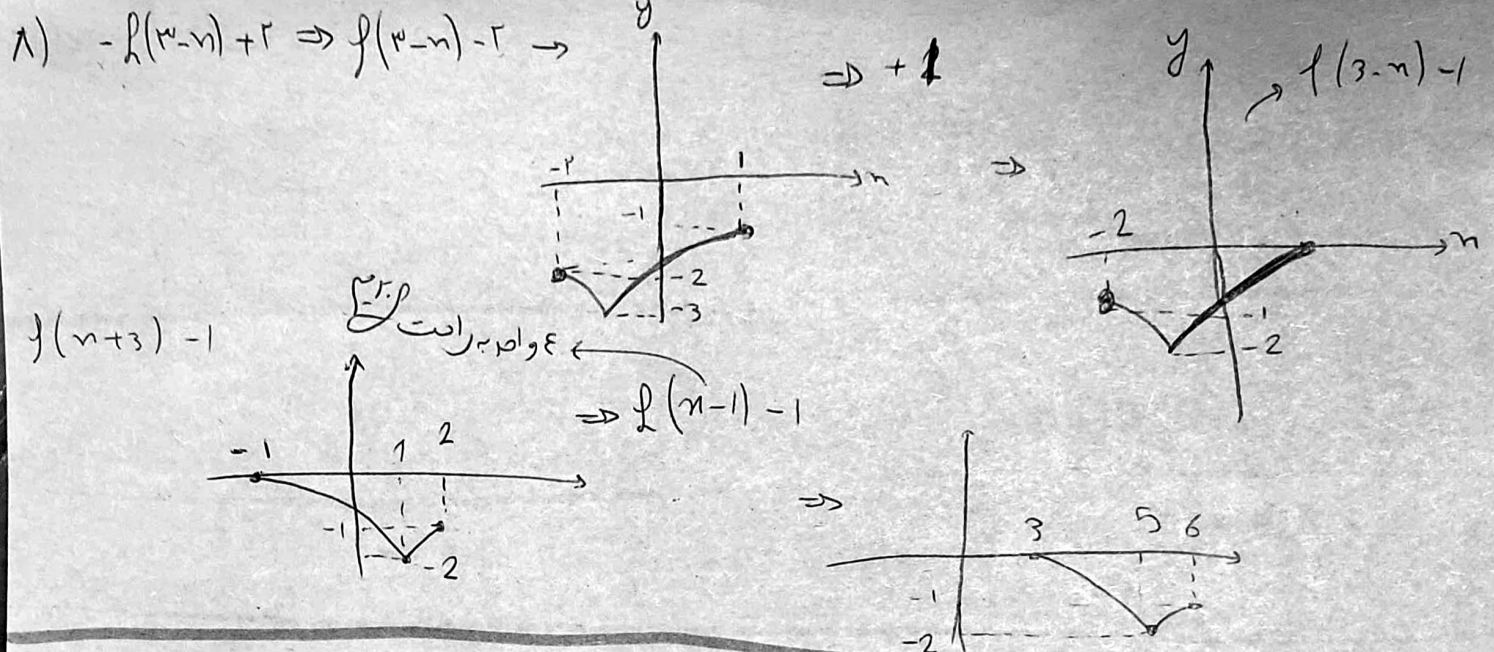
7)

$$f(n) = \frac{n}{r} \Rightarrow \frac{n+r}{r} \Rightarrow -\frac{n+r}{r} + 3 \Rightarrow -\frac{n}{r} + 3 \Rightarrow -\frac{1}{r} + 3 = -1$$

$$\Rightarrow -\frac{1}{r} + 3 = -1 \Rightarrow -\frac{1}{r} = -4 \Rightarrow \frac{1}{r} = 4 \Rightarrow r = \frac{1}{4}$$

8)

$$-f(n+r) \Rightarrow f(n-r) \Rightarrow f(3-n)$$



10) $g(n) = \sqrt{2n f(n) - f(n)^2} \Rightarrow f(n)(2n - f(n)) \geq 0 \Rightarrow$

$f(n) = -$ or $f(n) = 2n$

$\Rightarrow \{0, 1, 2, 4\} \Rightarrow \{0, 1, 2, 3\}$

$\mathbb{Z}$