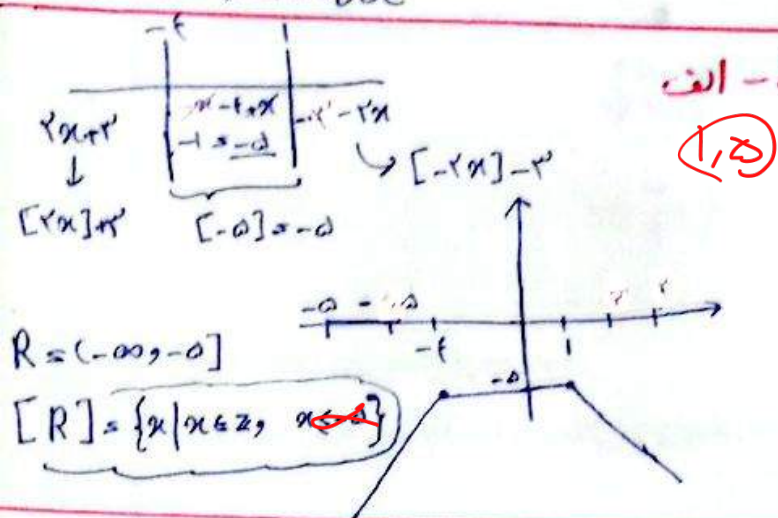
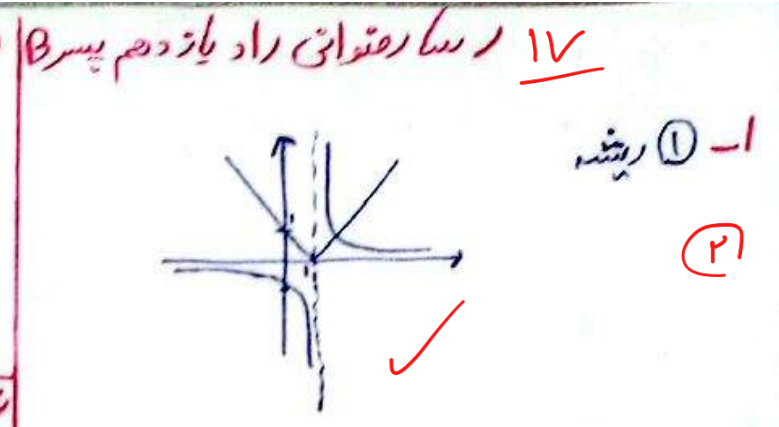
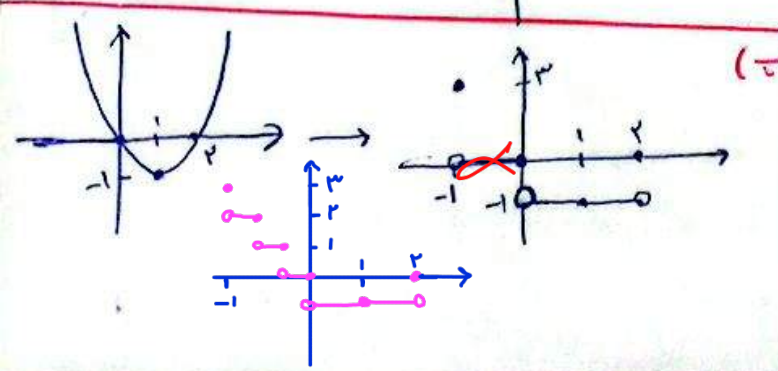
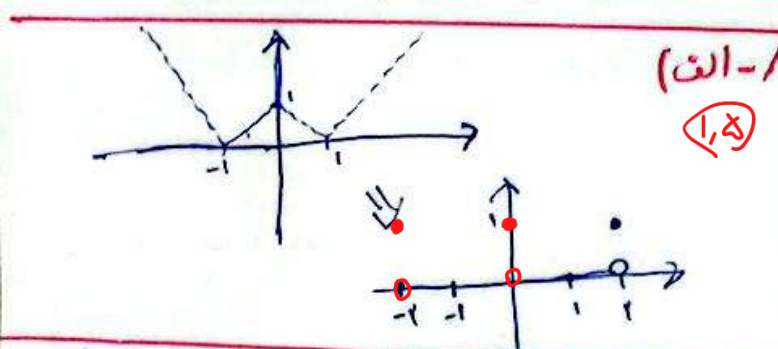
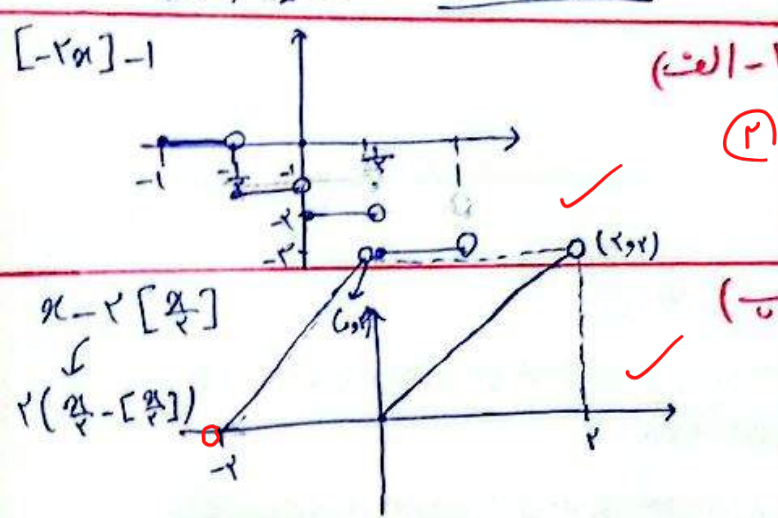


$\left| \frac{1}{2}x \right| - 2 \rightarrow \left| \frac{1}{2}(x+4) \right| - 2 \rightarrow \left| \frac{x}{2} + 2 \right| - 1$   
 $\left| \frac{1}{2}x \right| - 2 = \left| \frac{x}{2} + 2 \right| - 1 \Rightarrow \left| \frac{x}{2} \right| = \left| \frac{x}{2} + 2 \right| + 1$   
 $\rightarrow x > 0 \rightarrow 3 = 0 \text{ } \emptyset \emptyset \emptyset$   
 $\rightarrow -4 < x < 0 \rightarrow -\frac{x}{2} = \frac{x}{2} + 2 + 1 \Rightarrow x = -3$  ✓  
 $\rightarrow x < -4 \rightarrow -1 = 0 \text{ } \emptyset \emptyset \emptyset$



$\frac{1}{x} - [1 + \frac{1}{x}] = \frac{1}{x} - [\frac{1}{x}] - 1$   
 $[0] \Rightarrow R = [-1, 0]$  ✓



الف-۲

$\frac{x-1}{x} \leq 2 - \frac{1}{x}$   
 $-2 < 2 - \frac{1}{x} < 2 \Rightarrow -4 < -\frac{1}{x} < 0 \Rightarrow 0 < \frac{1}{x} < 4$   
 $\Rightarrow \frac{1}{4} < x \Rightarrow (\frac{1}{4}, \infty)$  ✓

$\frac{x-2}{x+1} > 1 \rightarrow \frac{x-2-1-x}{x+1} > 0 \rightarrow \frac{-x-2}{x+1} > 0$   
 $\frac{x-2}{x+1} < -1$   
 $\rightarrow \frac{x-2+x+1}{x+1} < 0 \Rightarrow \frac{2x-1}{x+1} < 0$   
 $\rightarrow (-\frac{1}{2}, \frac{1}{2})$  (II)  
 $(I) \cap (II) = (-\frac{1}{2}, \frac{1}{2}) - \{-\frac{1}{2}\}$  ✓

۳

$x^2 < |x+6|$   
 $\Rightarrow x \in (-2, 4)$  (۲)  
 $-B < x-A < B \Rightarrow x+B < x < x+B$   
 $A+B \leq 2$   
 $A-B \leq -2 \Rightarrow 2A \leq 1 \Rightarrow A \leq \frac{1}{2}$  ✓

۴

|         |                |                 |           |
|---------|----------------|-----------------|-----------|
|         | -1             | 0               | 2         |
|         | *              | *               |           |
| -x+1+2x | x+1+2x-x+1     | x+1-2x-x        | x+1-2x    |
| -x+2+1  | ≤ 2x+3         | +1 ≤ -2x+1      | +x-2 = -1 |
| ①       | min=1<br>max=3 | max=1<br>min=-1 | ①         |

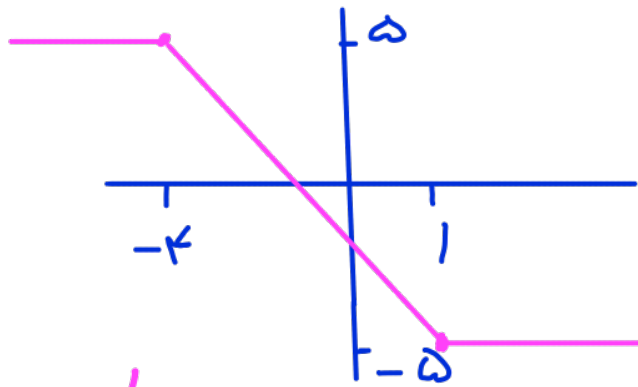
$\max x = 3$   
 $\min x = -1$   
 $3-1 \leq 2$  ✓

البته بدون محاسبه این دو تابع به max و min رسیدن بدون ظابطه خطی و ماکسیم و مینیمم تابع راه سرتخته دانسته مشخص می کنه

الف ۶

$$[1n-11 - 1n4f1]$$

$$R = \{-5, -4, \dots, 5\}$$



چون برابرت داریم، برد فقط شامل اعداد صحیح این بازه می باشد

$$\sqrt{2} \approx 1/4 \quad | -1/4 = -0.4 \rightarrow (-0.4)^4 \approx 0.256$$

$$\Rightarrow [(1+\sqrt{2})^4] = [198] = \underline{198}$$

$$(1+\sqrt{2})^4 = 198 - (1-\sqrt{2})^4$$

$$[(1+\sqrt{2})^4] = [198 - (1-\sqrt{2})^4] = 198 + [- (1-\sqrt{2})^4] = \boxed{197}$$

[0-]

-10  
0

$$\begin{aligned} a + [b] &= 4.2 \Rightarrow [a] + [b] = 4 \\ a &= 0.4 \\ b - [a] &= 4.4 \quad [b] - [a] = 4 \quad [a] = 1 \\ b &= 0.4 \end{aligned} \quad \left. \begin{array}{l} \Rightarrow [b] = 3 \\ [a] = 1 \end{array} \right\} \quad \text{②-۱}$$

$1.2 + 3.4 = 4.6$  ✓  $b = 3.4 \quad a = 1.2$