

۱۷، ۷۵

نام و نام خانوادگی: فرزند: پاسنامه تشریحی تکلیف شماره ۲۵... کلاس: یازدهم... A

$$\frac{1}{x-1} = |x-1| \rightarrow x-1 |x-1| = 1$$

$$x \geq 1 \rightarrow x^2 - 2x + 1 = 1 \rightarrow x^2 - 2x = 0 \rightarrow x = 0 \text{ یا } x = 2 \rightarrow x = 2$$

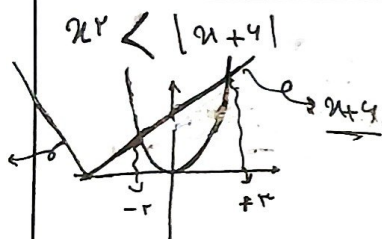
$$x \leq 1 \rightarrow -x^2 + 2x - 1 \rightarrow x^2 - 2x + 2 = 0 \rightarrow \Delta < 0$$

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الف) $\left| \frac{x-1}{x} \right| < 2 \rightarrow -2 < \frac{x-1}{x} < 2 \rightarrow \frac{x-1}{x} > 0 \rightarrow \frac{0}{1-1} + 1$
 $\frac{x-1}{x} < 2 \rightarrow \frac{x-1}{x} - 2 < 0 \rightarrow \frac{x-1-2x}{x} < 0 \rightarrow \frac{-x-1}{x} < 0 \rightarrow x > -1$
 $\frac{x-1}{x} > -2 \rightarrow \frac{x-1}{x} + 2 > 0 \rightarrow \frac{x-1+2x}{x} > 0 \rightarrow \frac{3x-1}{x} > 0 \rightarrow x < \frac{1}{3}$
 $\rightarrow -1 < x < \frac{1}{3}$

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ب) $\left| \frac{x-2}{x+1} \right| > 1 \rightarrow \frac{x-2}{x+1} > 1 \text{ یا } \frac{x-2}{x+1} < -1$
 $\frac{x-2}{x+1} > 1 \rightarrow \frac{x-2-x-1}{x+1} > 0 \rightarrow \frac{-2x-3}{x+1} > 0 \rightarrow \frac{-2x-3}{x+1} < 0 \rightarrow -2x-3 < 0 \rightarrow x > -\frac{3}{2}$
 $\frac{x-2}{x+1} < -1 \rightarrow \frac{x-2}{x+1} + 1 < 0 \rightarrow \frac{x-2+x+1}{x+1} < 0 \rightarrow \frac{2x-1}{x+1} < 0 \rightarrow 2x-1 < 0 \rightarrow x < \frac{1}{2}$
 $\rightarrow -\frac{3}{2} < x < \frac{1}{2}$

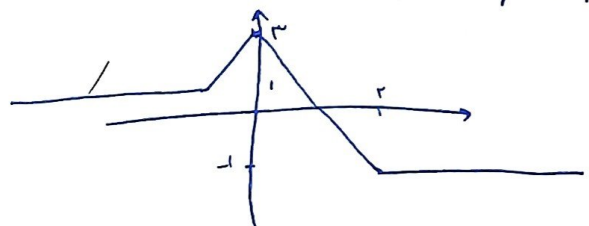


$$x^2 < |x+4| \rightarrow x^2 = |x+4| \rightarrow x^2 - x - 4 = 0 \rightarrow (x-3)(x+2) = 0 \rightarrow x = -2, 3$$

 $\rightarrow -2 < x < 3 \rightarrow -2, 5 < x - 5 < 2, 8$
 $\rightarrow |x-5| < 2, 8 \rightarrow \alpha = 5$

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$$|x+1| - |x-1| = y$$



$$\frac{-1}{1} \quad \frac{0}{x+1} \quad \frac{1}{-x+1} \quad \frac{1}{-1}$$

 $\max \rightarrow 1$
 $\min \rightarrow -1$
 $\rightarrow (2)$

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$$\left| \frac{1}{x} \right| - 2 \leq 0 \rightarrow y = \left| \frac{1}{x} \right| - 2 \rightarrow y = \left| \frac{1}{x} + 2 \right| - 1$$

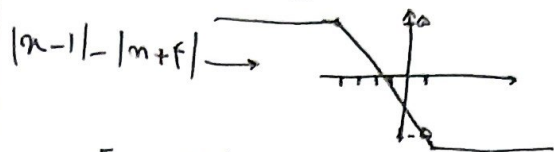
$$y = \left| \frac{1}{x} \right| - 2 \text{ و } y = \left| \frac{1}{x} + 2 \right| - 1 \rightarrow \left| \frac{1}{x} \right| - 2 = \left| \frac{1}{x} + 2 \right| - 1$$

$$\rightarrow \frac{1}{x} < 0 \rightarrow -\frac{1}{x} < 0 \rightarrow -\frac{1}{x} - 2 = \frac{1}{x} + 2 - 1 \rightarrow x = -2$$

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الف) $f(x) = |1-x| - |x+f|$



$\rightarrow [0] \Rightarrow \{0, f, f, f, 0, -1, -f, -f, -f, 0\}$

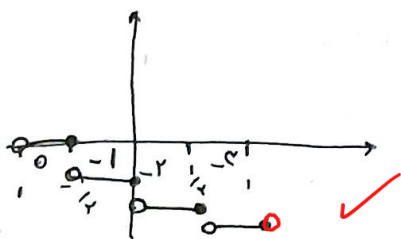
ب) $f(n) = \frac{1}{n} - \left\lfloor \frac{n+1}{n} \right\rfloor$

$f(n), \frac{1}{n} - \left\lfloor \frac{n}{n} + \frac{1}{n} \right\rfloor = \frac{1}{n} - \left\lfloor \frac{1}{n} \right\rfloor = 1$

$0 \leq \left\lfloor \frac{1}{n} \right\rfloor \leq 1 \rightarrow \frac{1}{n} - \left\lfloor \frac{1}{n} \right\rfloor \rightarrow [0, 1)$

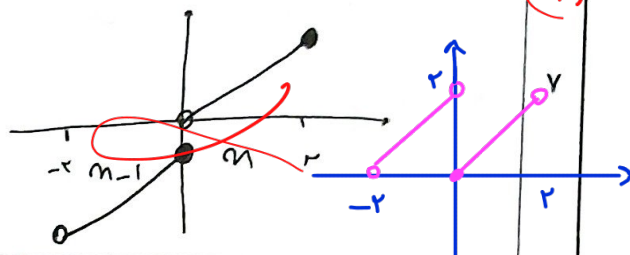
$[0, 1) - 1 \xrightarrow{R} f: [-1, 0) \checkmark$

الف) $y = \lfloor -rx \rfloor - 1$

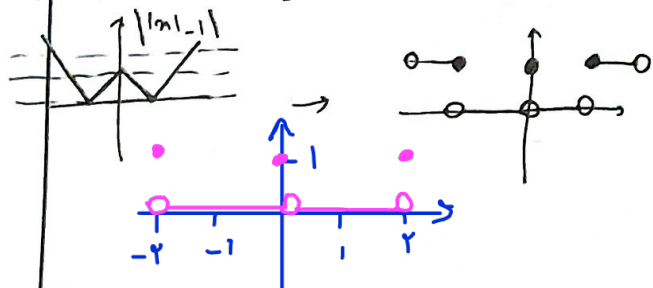


$(-1, 1)$

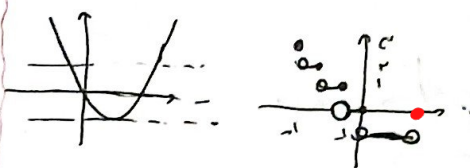
ب) $f(x) = x - r \left\lfloor \frac{x}{r} \right\rfloor \quad x \in (-r, r)$



الف) $\lfloor |x| - 1 \rfloor \quad x \in [-r, r]$



ب) $y = \lfloor x^r - r_m \rfloor$



$b = [a], r, f$

$a + [b], f, r$

$b = \cup, f$

$[a] + [b], f \rightarrow [b] = r$

$a = \cup, r$

$[b] - [a] = r, [a] = 1$

$b = r, f \checkmark, a = 1, r \checkmark \rightarrow a + b = \boxed{f, 4}$

$(1+\sqrt{r})^4 + (1-\sqrt{r})^4 = 19 \rightarrow (1+\sqrt{r})^4 = 19 - (1-\sqrt{r})^4$

$-4 < 1-\sqrt{r} < 0 \rightarrow 0 < (1+\sqrt{r})^4 < 1 \rightarrow -1 < -(1-\sqrt{r})^4 < 0 \xrightarrow{19\sqrt{r}} 19 - (1-\sqrt{r})^4 < 19$

$\rightarrow 19\sqrt{r} < (1+\sqrt{r})^4 < 19 \rightarrow \boxed{(1+\sqrt{r})^4} = 19\sqrt{r} \checkmark$