

صفر

(1) $\frac{|m|+1}{|m|-2} \rightarrow y(a-2y) = |m|+1 \rightarrow |m|(y-1) = 1+2y \rightarrow |m| = \frac{1+2y}{y-1} \geq 0 \rightarrow R = (-\infty, -\frac{1}{2}] \cup (1, +\infty)$

اگر $y = \frac{a^2+1}{|m|}$ $\begin{cases} a > 0 \rightarrow a + \frac{1}{a} \rightarrow [2, +\infty) \\ a < 0 \rightarrow \frac{a^2+1}{-a} \rightarrow -a - \frac{1}{a} \rightarrow (-\infty, -2) \end{cases}$ $R \rightarrow [2, +\infty) \cup (-\infty, -2)$

$y = \frac{a^2+m-2}{a+2} \rightarrow y(a+2y) = a^2+m-2 \rightarrow a^2+a(2-y)-2-y=0$

$a_1, a_2 = \frac{-2-y \pm \sqrt{(2-y)^2 - 4(-2-y)}}{2} \rightarrow y^2+2y+1 \geq 0$

$R = (-\infty, -1] \cup [1, +\infty)$

(3) $f(m) = \frac{a^2-a+\frac{1}{2}}{a^2-a+1} \rightarrow \frac{(a-\frac{1}{2})^2}{a^2-a+1} \rightarrow y(a^2-a+1) = a^2-a+\frac{1}{2} \rightarrow (y-1)a^2 - (y-1)a + (y-\frac{1}{2}) = 0$
 $\Delta \geq 0 \rightarrow [-(y-1)]^2 - 4(y-1)(y-\frac{1}{2}) \geq 0 \rightarrow (y-1)(-4y+2) \geq 0 \rightarrow 4y(y-1) \geq 0 \rightarrow y \leq 0 \text{ یا } y \geq 1 \rightarrow R = (-\infty, 0] \cup [1, +\infty)$

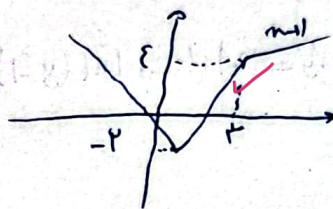
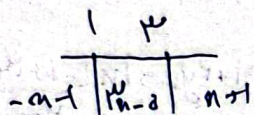
(4) $y = \sqrt{-a^2+2m-1}$ $\frac{a^2}{\mu} \rightarrow D = [0, \sqrt{2\mu}]$

و) $y = \sqrt{4a^2-1}$ $\frac{y}{-1} \rightarrow [-2, +\infty)$

الف) $y = \log(a^x a_{-1}(n))$ $R = (-\infty, +\infty)$

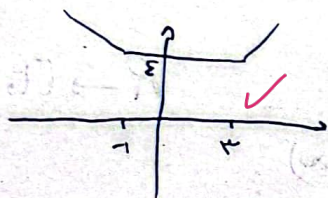
ب) $y = \log_p \left(\frac{a+1}{n} \right) \rightarrow a+1 \xrightarrow{n \rightarrow \infty} \infty \Rightarrow D = [1, +\infty)$

الف) $y = |x-1| - |x-3|$



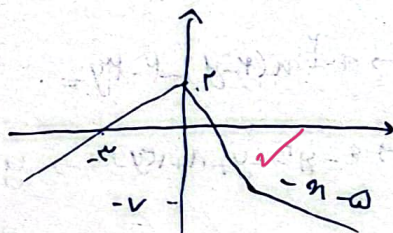
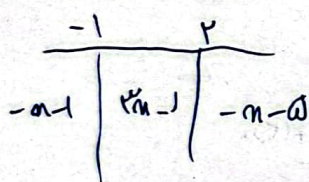
$D_f = [-1, +\infty)$

ب) $y = |x-3| + |x+1|$



$D_f = [\epsilon, +\infty)$

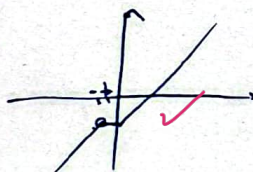
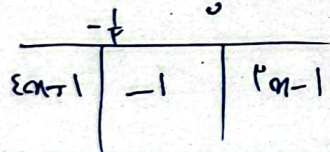
$|x-1| - |x+1| - 1 \leq 0$



$D = (-\infty, 2]$

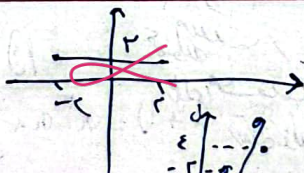
صفحه بعد...

$|x-1| - |x+1| + |x|$



$D = \mathbb{R}$

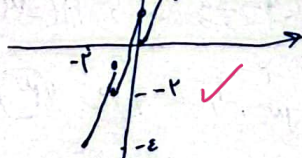
الف) $[m] + [p-n] \begin{cases} -1 \leq n < 0 \rightarrow p \\ 0 \leq n < 1 \rightarrow p \\ 1 \leq n < 2 \rightarrow p \end{cases}$



$D_f = \{p\}$

صفحه بعد...

ب) $|x-1| \begin{cases} -1 \leq n < 1 \rightarrow p+1 \\ -1 \leq n < 0 \rightarrow p+1 \\ 1 \leq n < 2 \rightarrow p \\ p \rightarrow p-1 = d \end{cases}$



$D = [-1, d]$

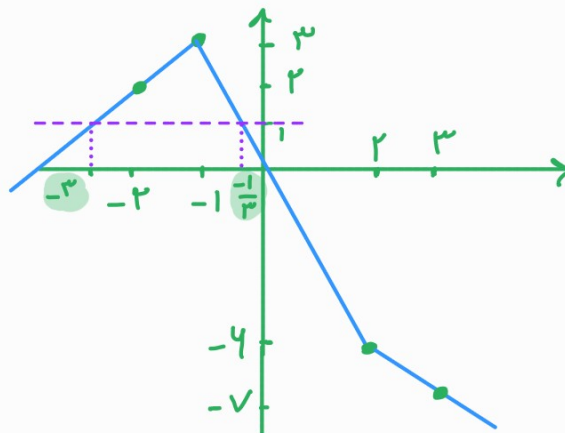
الف) $\begin{cases} 1 \rightarrow 1 \\ -1 \rightarrow 3 \\ \frac{1}{p} \rightarrow \frac{1}{p} \end{cases} D = [1, 3]$

ب) $\begin{cases} 0 \rightarrow 1 \\ 1 \rightarrow 3 \\ \frac{1}{p} \rightarrow \frac{1}{p} \end{cases} \rightarrow [1, 3]$

صفحه بعد...

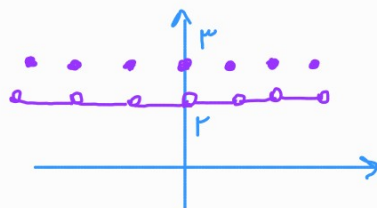
$$\begin{cases} -u-4 & u \geq 2 \\ -3u & -1 \leq u \leq 2 \\ u+4 & u \leq -1 \end{cases}$$

$$R_y = (-\infty, -3] \cup [-\frac{1}{3}, +\infty)$$



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الف 9) $y = [u] + [-u] + 3$



$$R_y = \{1, 3\}$$

$$y = \sin^2 u - \boxed{\sin u} + 1$$

$$\sin u = -1 \rightarrow y = 3$$

$$\sin u = 1 \rightarrow y = 1$$

$$\sin u = \frac{-b}{r_a} = \frac{1}{r} \rightarrow y = \frac{r}{r}$$

$$\left. \begin{array}{l} \sin u = -1 \rightarrow y = 3 \\ \sin u = 1 \rightarrow y = 1 \\ \sin u = \frac{-b}{r_a} = \frac{1}{r} \rightarrow y = \frac{r}{r} \end{array} \right\} R_y = [\frac{r}{r}, 3]$$

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$$y = \sin^2 u + \boxed{\sin^2 u} + 1$$

$$\sin^2 u = 0 \rightarrow y = 1$$

$$\sin^2 u = 1 \rightarrow y = 3$$

$$\sin^2 u = \frac{-b}{r_a} = \frac{-1}{r} x$$

$$\left. \begin{array}{l} \sin^2 u = 0 \rightarrow y = 1 \\ \sin^2 u = 1 \rightarrow y = 3 \\ \sin^2 u = \frac{-b}{r_a} = \frac{-1}{r} x \end{array} \right\} R_y = [1, 3]$$

الف 10