

17/20

2. ارسطو

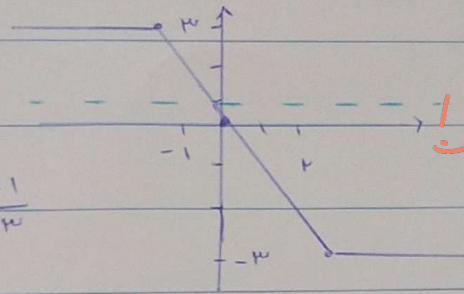
سوال (8)

$$|x-2| - |x+2| \leq 1$$

$$x-2-x-2 \leq -1 \quad \text{در بازه } [-2, 2]$$

$$\Rightarrow -4 \leq -1 \Rightarrow x \geq \frac{-1}{2}$$

$$\Rightarrow \left[\frac{-1}{2}, +\infty \right)$$

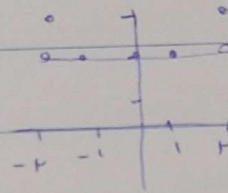


اینجور در نظر!

سوال (9)

$$f(x) = [x] + [x-2]$$

$$x = -2 \rightarrow 2 \quad / \quad -2 < x < -1 \rightarrow 2, \dots$$



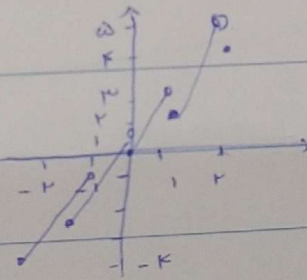
$$R_f = \{2, 3\}$$

$$\rightarrow) \quad x \in [-2, -1]$$

$$x = -2 \rightarrow x+2$$

$$-2 < x < -1 \rightarrow x+2$$

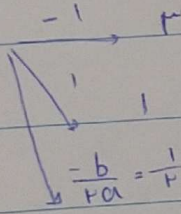
$$-1 < x < 0 \rightarrow x+1$$



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

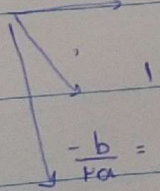
سوال (10)

$$y = \sin^2 x - \sin x + 1$$



$$\Rightarrow R_f = \left[\frac{1}{4}, 2 \right]$$

$$\rightarrow) \quad y = \sin^2 x + \sin^2 x + 1$$



$$\Rightarrow [1, 2]$$

110 1/2

$$Rf_2(-\alpha, \epsilon] V(\tau, \epsilon)$$

✓ وخرج می تواند مصرف شود در خارج از کشور

9.

✓

حرم صبر
سور

2

-	+	-
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$\frac{1}{2}$
 $\frac{1}{4}$
 $\frac{1}{8}$
 $\frac{1}{16}$
 $\frac{1}{32}$
 $\frac{1}{64}$
 $\frac{1}{128}$
 $\frac{1}{256}$
 $\frac{1}{512}$
 $\frac{1}{1024}$
 $\frac{1}{2048}$
 $\frac{1}{4096}$
 $\frac{1}{8192}$
 $\frac{1}{16384}$
 $\frac{1}{32768}$
 $\frac{1}{65536}$
 $\frac{1}{131072}$
 $\frac{1}{262144}$
 $\frac{1}{524288}$
 $\frac{1}{1048576}$
 $\frac{1}{2097152}$
 $\frac{1}{4194304}$
 $\frac{1}{8388608}$
 $\frac{1}{16777216}$
 $\frac{1}{33554432}$
 $\frac{1}{67108864}$
 $\frac{1}{134217728}$
 $\frac{1}{268435456}$
 $\frac{1}{536870912}$
 $\frac{1}{1073741824}$
 $\frac{1}{2147483648}$
 $\frac{1}{4294967296}$
 $\frac{1}{8589934592}$
 $\frac{1}{17179869184}$
 $\frac{1}{34359738368}$
 $\frac{1}{68719476736}$
 $\frac{1}{137438953472}$
 $\frac{1}{274877906944}$
 $\frac{1}{549755813888}$
 $\frac{1}{1099511627776}$
 $\frac{1}{2199023255552}$
 $\frac{1}{4398046511104}$
 $\frac{1}{8796093022208}$
 $\frac{1}{17592186044416}$
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 $\frac{1}{9007199254740992}$
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 $\frac{1}{72057594037927936}$
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 $\frac{1}{288230376151711744}$
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 $\frac{1}{590295810358705651712}$
 $\frac{1}{1180591620717411303424}$
 $\frac{1}{2361183241434822606848}$
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 $\frac{1}{41538374868278621028243970633760768}$
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 $\frac{1}{5316911983139663491615228241121378304}$
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 $\frac{1}{21267647932558653966460912964485513216}$
 $\frac{1}{42535295865117307932921825928971026432}$
 $\frac{1}{850705917302346158658436518$

$$[-2, +\infty)$$

سوال ۷۷

الحمد لله

$$[99 + \alpha]$$

سوال 1) $y = \frac{x^2 + x + 1}{x - 1} \Rightarrow yx - y = x^2 + x + 1 \rightarrow x^2 + x(1 - y) + 1 + y$

$\Delta x = 0 \Rightarrow 1 + y - 2y - 1 - ky = 0 \Rightarrow y^2 - 4y - 1 = 0 \Rightarrow (y - 4)(y + 1)$ 2

$\Rightarrow \begin{array}{c|c|c} -1 & & 4 \\ \hline + & - & + \end{array} \quad [-\infty, -1] \cup [4, +\infty)$ ✓

الف) $y = 2x^2 + 5x + 1 \Rightarrow \frac{-b}{2a} = \frac{-5}{4} \rightarrow \frac{-11}{4}$ (2 سوال)

$\Rightarrow R_f = [-\frac{11}{4}, +\infty)$ ✓

1, 10

ب) $y = \sqrt{-x^2 + 4x} - 2 \Rightarrow \frac{-b}{2a} = \frac{-4}{-2} = 2 \Rightarrow 4$ ✓

$\Rightarrow (-\infty, 2] = R_f \rightarrow R_f = [0, 2]$ (دائره)

نحوه!

ج) $y = \sqrt{x^2 - 3x^2 + 4x + 1} \Rightarrow$ چون برکتی توان بدلات بدلات R است

$R_f = [1, +\infty)$ ✓

و چون R زیر دایره است :

د) $\log(x^2 - 4x^2 + 5x + 4) \Rightarrow (-\infty, +\infty)$ ✓

2

سوال 3) الف) $y = \frac{3x + 1}{2x - 4} \Rightarrow R - \left\{ \frac{a}{c} \right\} \rightarrow \mathbb{R} - \left\{ \frac{3}{2} \right\} = R_f$ ✓

ب) $y = \sqrt{\frac{3x + 1}{x - 2}} \Rightarrow R - \left\{ \frac{a}{c} \right\} \rightarrow \sqrt{\mathbb{R} - \left\{ \frac{3}{2} \right\}} = R_f = [0, +\infty) - \left\{ \frac{3}{2} \right\}$ ✓

ج) $y = \frac{x^2 + 4}{\sqrt{x^2 + 4}} \Rightarrow \frac{\sqrt{x^2 + 4} + 1}{\sqrt{x^2 + 4}} \Rightarrow \sqrt{x^2 + 4} \geq 1 \Rightarrow \sqrt{x^2 + 4} \geq \sqrt{3}$

$\sqrt{3} + \frac{1}{\sqrt{3}} = \frac{4}{\sqrt{3}} \Rightarrow \left[\frac{4}{\sqrt{3}}, +\infty \right)$ ✓

د) $y = x^2 + \frac{1}{x^2 + 4} \Rightarrow x^2 + 4 + \frac{1}{x^2 + 4} - 4 \Rightarrow \left[\frac{1}{4}, +\infty \right)$ ✓