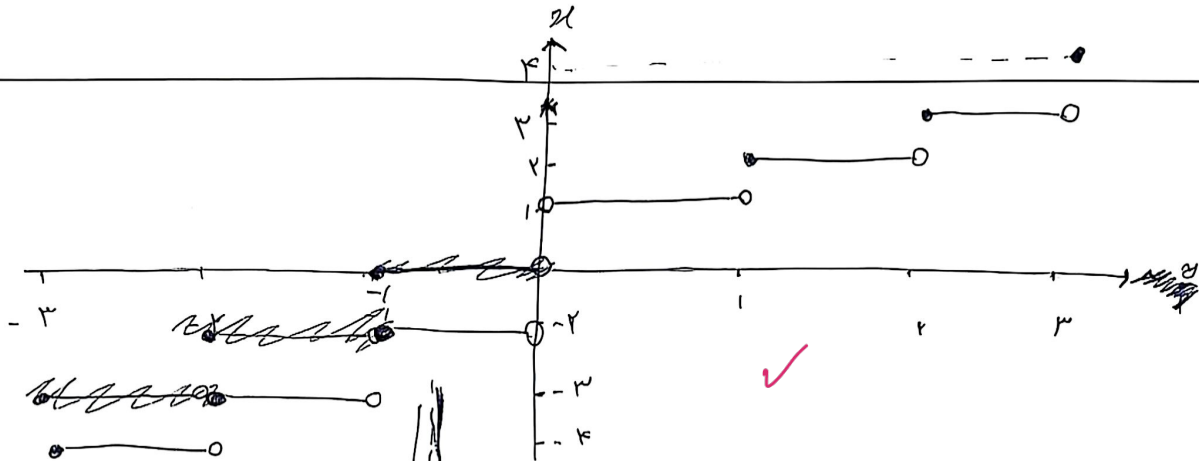


الف) $0 \leq \sin^2 x \leq 1 \rightarrow R_f = [-1, 1]$ ✓

(۲)

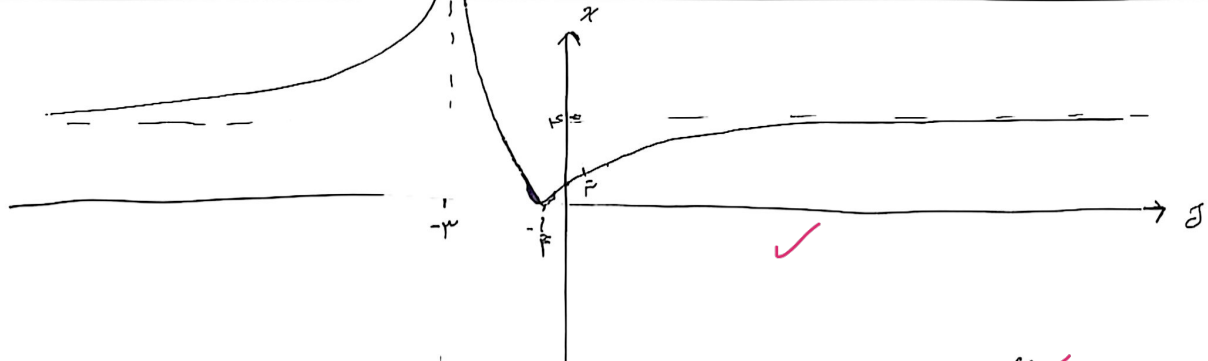
ب) $-1 \leq \cos^2 x \leq 1 \rightarrow R_g = [-1, 1]$ ✓

۱



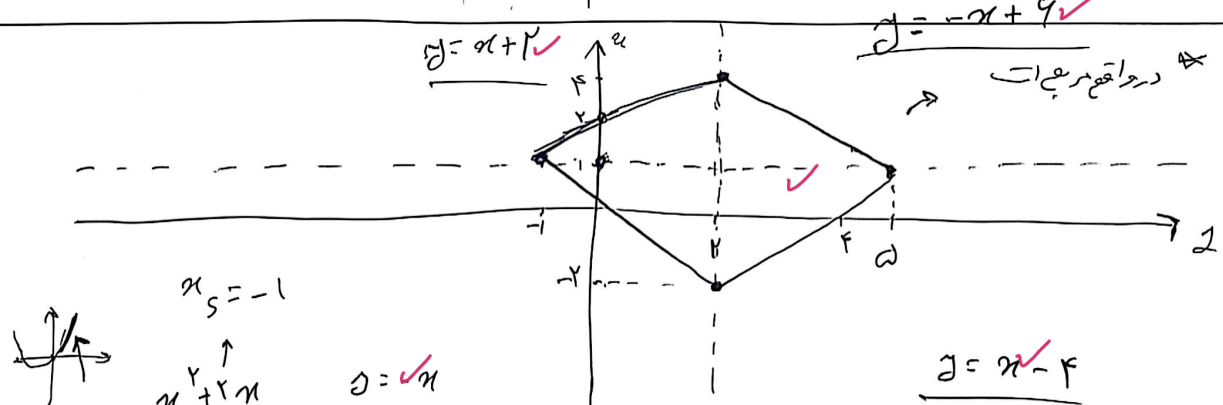
(۲)

۲



(۲)

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(۲)

۴

الف) $f(x) = \pm \sqrt{x} + 2\sqrt{x} \rightarrow R_f = [2 + 2\sqrt{x}, +\infty)$
 $2 \leq \frac{1}{x} + \infty$

(۲)

۵

ب) $x_5 = 1 \rightarrow R_g = [0, 4]$ ✓

$$D_f = \{1, 2, \dots, 9\} \rightarrow R_f = \frac{19}{1}, \frac{18}{1}, \frac{17}{1}, \frac{16}{1}, \frac{15}{1}, \frac{14}{1}, \frac{13}{1}, \frac{12}{1}, \frac{11}{1}$$

$$f(x) = \frac{10-x}{1} \quad \sum_{i=1}^9 \frac{10-i}{1} = 90 + (9 \times 1) \times (-\frac{1}{1}) = 81$$

(2)

9

$$D_f = [1, +\infty) \rightarrow a = 0$$

$$\sqrt{2b+c} = 1 \quad \begin{cases} b=1 \\ c=-2 \end{cases} \rightarrow g(x) = \sqrt{x^2 + 1} \rightarrow R_g = [1, +\infty)$$

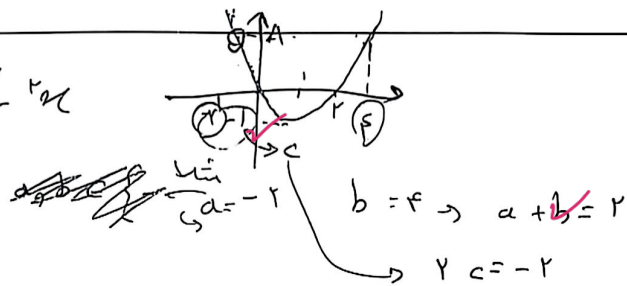
بطل بنویس

(1.5)

1

صفحه آخر...

$$f(x) = \frac{x(x+2)(x-2)}{x+2} = x^2 - 2x$$



$$\rightarrow f\left(\frac{a+b}{1c}\right) = f(-1) = 3$$

(2)

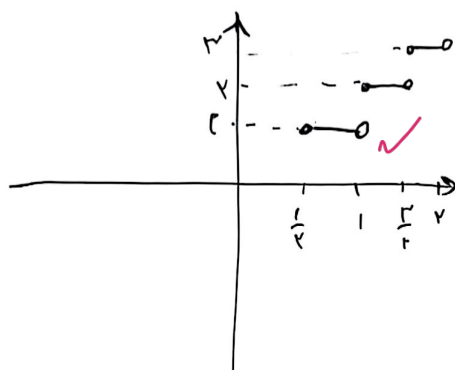
1

$$g = \sqrt[3]{(x-1)^3} = \sqrt[3]{x^3 - 3x^2 + 3x - 1} = x - 1$$

$$R_g = [-1-1, 1-1] = [-2, 0]$$

(2)

9



$$[x] \rightarrow k$$

$$\left[x + \frac{1}{2}\right] \rightarrow k - \frac{1}{2}$$

$$\rightarrow \text{بطل بنویس}$$

(2)

10

۷- با توجه به دامنه، زیر رادیکال یک خط با شیب مثبت بوده یعنی $a=0$ است و نقطه $(2,0)$ هم در معادله خط صدق می‌کند...

$$\begin{cases} (2,0) \rightarrow 2b+c=0 \\ (3,1) \rightarrow 3b+c=1 \end{cases} \rightarrow b=1, c=-2$$

$$g(x) = \sqrt{x^2+4} \rightarrow \text{ext} \Big|_4^0 \Rightarrow R_g = \sqrt{[4, +\infty)} = [2, +\infty)$$