

$$f(u) = \sqrt{1-u^2} \Rightarrow 1-u^2=0 \Rightarrow u^2=1 \Rightarrow u=\pm 1 \rightarrow \frac{u}{\sqrt{1-u^2}} = \frac{1}{0} \neq$$

$$D_f = [-1, 1] \Rightarrow (-1, 0) \cup (0, 1) \cup (1, 0)$$

$$\Rightarrow 1g - 3f \Rightarrow (-1, 1); (0, 0); (1, 1) \Rightarrow R_f = \{ \dots \}$$

$$2+2=4 \quad 11$$

$$f(u) = \sqrt{u-1} \Rightarrow D_f = [1, +\infty) \Rightarrow u=1 \Rightarrow y=0 \rightarrow R_f = [0, +\infty)$$

$$g(u) = \frac{1}{e}u + 3 \Rightarrow D_g = (-\infty, e] \Rightarrow u=3 \Rightarrow y=e \Rightarrow R_g = [-\infty, e]$$

$$R_f \cup R_g \Rightarrow (-\infty, e] \cup [0, +\infty) \checkmark$$

$$-\frac{u^2}{2} + u + 3 = \frac{3}{2} \Rightarrow -\frac{u^2}{2} + u = -\frac{3}{2} \Rightarrow u^2 - 2u = 3 \Rightarrow (u-3)(u+1) \Rightarrow u=3 \quad u=-1$$

$$\Rightarrow u^2 - 2u - 3 = 0 \Rightarrow (u-3)(u+1) \Rightarrow u=3 \quad u=-1$$

$$(-1, 3) \Rightarrow b-a \Rightarrow \sqrt{3-(-1)} \Rightarrow \sqrt{4} \Rightarrow 2 \checkmark$$

$$f(u) = |u-1| + |u-3| + |u-5| \Rightarrow u=1 \Rightarrow 1-1+3-1+5-1 \Rightarrow 7$$

$$\Rightarrow u=1 \Rightarrow 1-1+3-1+5-1 \Rightarrow 7$$

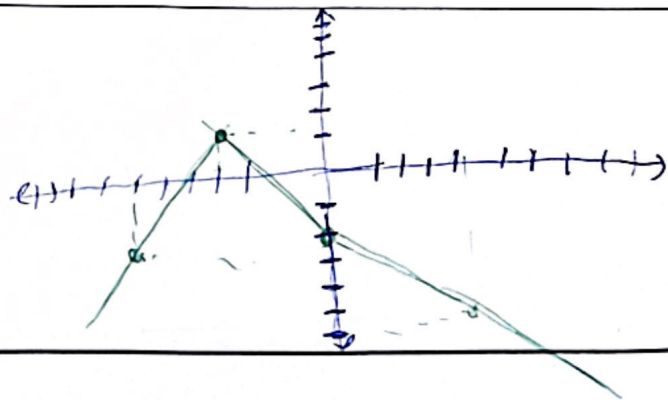
$$1 \leq u \leq 3 \Rightarrow u-1+3-u+5-1 \Rightarrow 7$$

$$3 \leq u \leq 5 \Rightarrow u-1+3-u+5-u \Rightarrow 7$$

$$u \geq 5 \Rightarrow u-1+3-u+5-u \Rightarrow 7$$

$$y = |u| - 2|u+1|$$

$$\Rightarrow f(u) = \begin{cases} u-2(u+1) & u < -1 \\ -u-2 & -1 \leq u < 0 \\ -u-2 & u \geq 0 \end{cases}$$



$$R_f = [-\infty, 9] \checkmark$$

$$\frac{a^2 + a + m}{a+1} \Rightarrow a + \varepsilon + \frac{m-\varepsilon}{a+1} \Rightarrow m < \varepsilon \Rightarrow R_f = 1 \quad \text{چرا؟!}$$

$$m < \varepsilon \Rightarrow a + \varepsilon \Rightarrow R_f = R - \{\varepsilon\} \quad \checkmark$$

$$\Rightarrow m < \varepsilon \Rightarrow 1 \text{ و } 2 \text{ و } 3 \Rightarrow \text{مورد اولی} \quad \checkmark$$

$m > \varepsilon \Rightarrow$ بردار معصوم را در تقویت
نبردست

راحت است با توجه به روشی که رو بخون

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$$y = a + i - \sqrt{2a+3} \Rightarrow a = b \Rightarrow 2b + c = 0 \Rightarrow 2b = -c \Rightarrow b = -\frac{c}{2} \quad \checkmark$$

$$\Rightarrow a + i = 0 \Rightarrow a = -i \quad \checkmark \Rightarrow a + b = -\frac{c}{2} + (-i) \Rightarrow -i \quad \checkmark$$

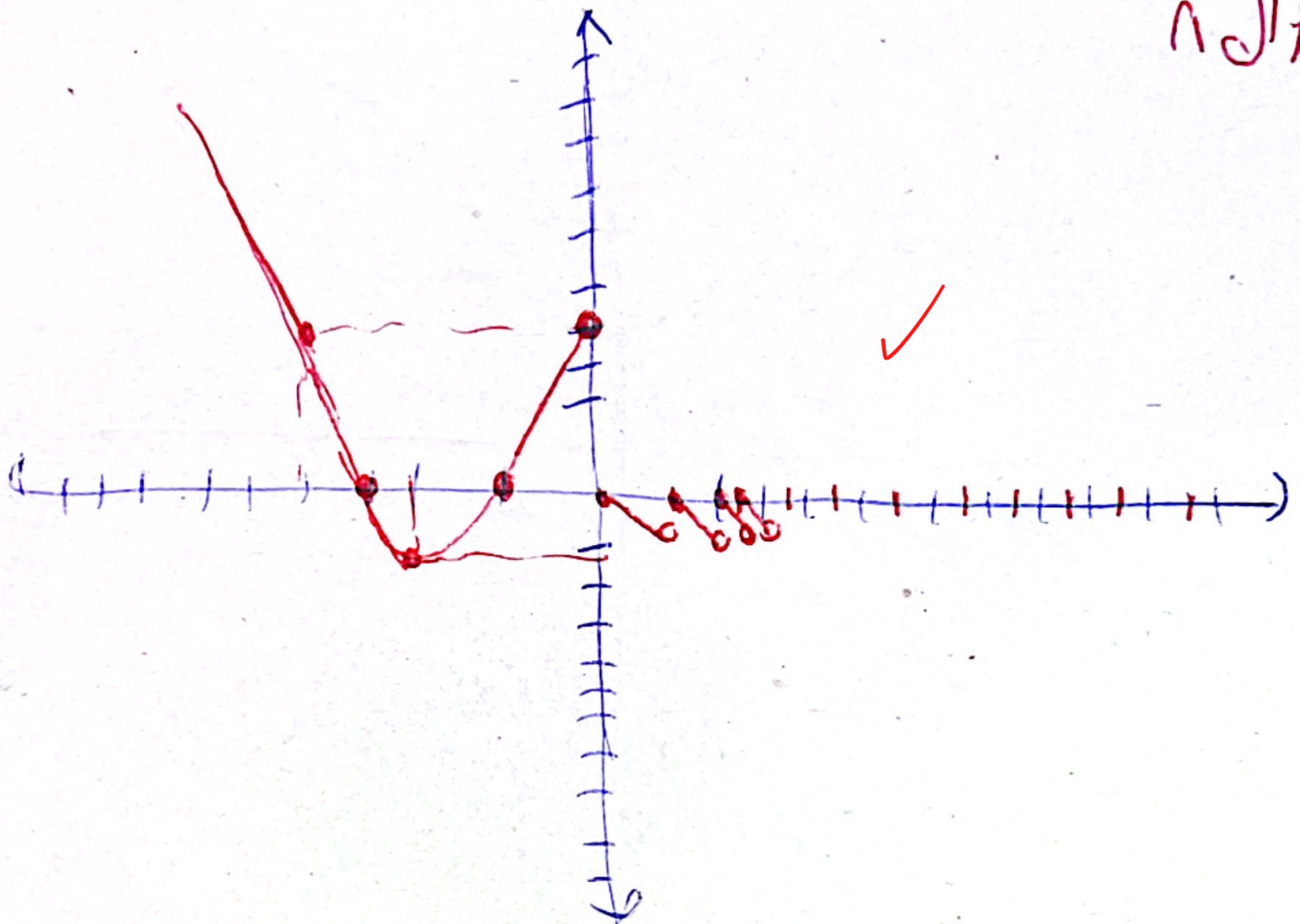
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المسألة



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

$$u \in \mathbb{R} \text{ and } u \geq 0 \Rightarrow u \leq 0$$

$$u = 0 \Rightarrow y = 0$$

$$u = -1 \Rightarrow 1 - \epsilon + u = y = 0$$

$$u = -2 \Rightarrow \epsilon - 1 + u = y = -1$$

$$u = -3 \Rightarrow 4 - 1 + u = y = 0$$

$$u = -4 \Rightarrow 16 - 1 + u = y = 0$$

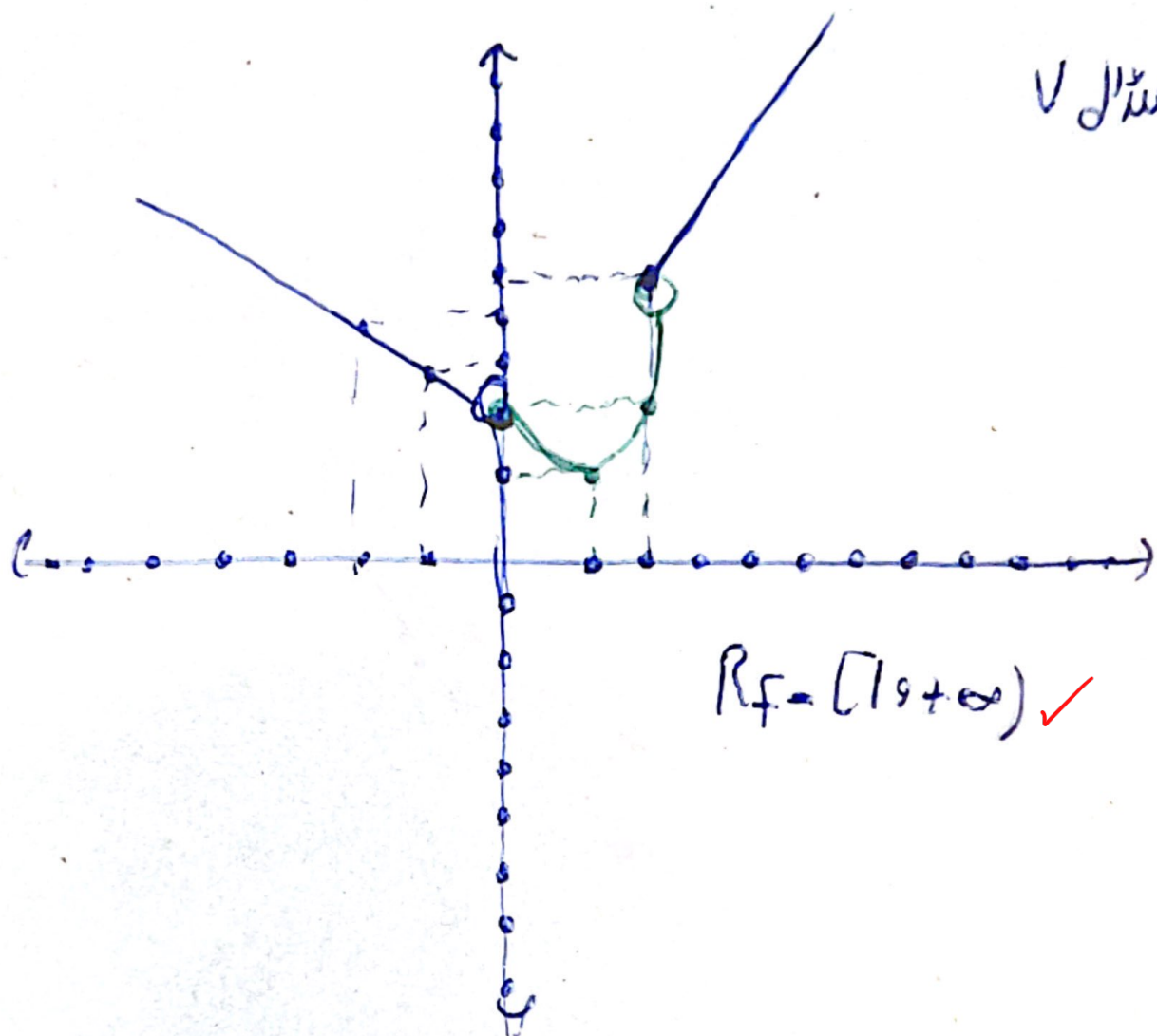
$$[1, 2] - [1, 2] \text{ and } u \geq 0$$

$$[0, 1] \Rightarrow [0, 1]$$

$$[1, 2] \subset [0, 1]$$

$$[1, 2] \subset [0, 1], \dots$$

مسألة ٧



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

$$f(x) = \begin{cases} x + 1 & x \geq 1 \\ 1 - x + 1 & 0 \leq x < 1 \\ 1 & x < 0 \end{cases}$$