

۱۹، ۵

امیر صفیر

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۸... کلاس A

$$y_g: (-1, 2), (0, 8), (2, 0), (1, 4)$$

$$Df: [-1, 1] \longrightarrow \begin{cases} \text{وجود ندارد} \\ \text{پس ناممکن} \end{cases}$$

$$\begin{aligned} y_g - y_f &\Rightarrow (-1, 2) - (-1, 0) = (-1, 2) \\ &\quad (0, 8) - (0, 2) = (0, 6) \\ &\quad (1, 4) - (1, 0) = (1, 4) \end{aligned} \quad \left. \vphantom{\begin{aligned} y_g - y_f &\Rightarrow \end{aligned}} \right\} Rf \subseteq R_{y_g - y_f} = \{2, 4, 6\}$$

$$2 + 4 + 6 = 12 \quad \checkmark$$

$$f(x) = 2x - 1$$

$$x_{\min} = 3 \rightsquigarrow y_{\min} = 5$$

$$g(x) = \frac{1}{3}x + 3$$

$$x_{\max} = 3 \rightsquigarrow y_{\max} = 4$$

$$Rf = [5, +\infty)$$

$$Rg = (-\infty, 4]$$

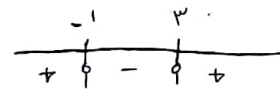
$$\begin{aligned} & \cup \rightarrow (-\infty, 4] \cup [5, +\infty) \\ & \quad \quad \quad \cup \\ & \quad \quad \quad \mathbb{R} - (4, 5) \quad \checkmark \end{aligned}$$

$$\frac{-x^2}{x} + x + 3 > \frac{3}{x}$$

$$-x^2 + x + 3 > 3$$

$$x^2 - x - 3 < 0$$

$$(x - 3)(x + 1) < 0$$



$$Rf = (-1, 3)$$

$$\max \sqrt{b-a} = \sqrt{3-(-1)} = 2 \quad \checkmark$$

$$|x-1| + |x-3| \leq |2x-4|$$

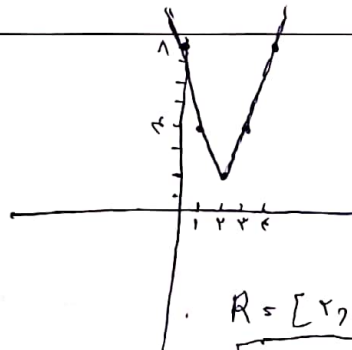
$$x > 3 \quad \text{بزرگ}$$

$$x < 1 \quad \text{کوچک}$$

$$x = 2 \Rightarrow 2$$

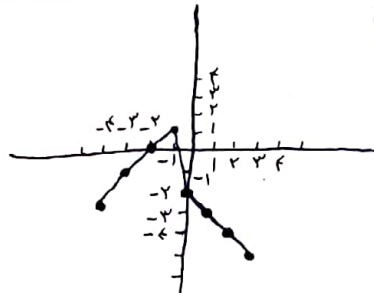
$$2 < x < 3 \quad \text{میانی}$$

$$1 < x < 2 \quad \text{کوچک}$$



$$R = [2, +\infty)$$

$$\text{لغتین مقدار} = 2 \quad \checkmark$$



$$Rf = (-\infty, 1] \quad \checkmark$$

$y = \frac{x^2 + 8x + m}{x+1}$ انہ $m = 4$ ہاں ۳، ۲، ۱، ۰ کے لئے حذف شدہ و دیہ R میں ہیں $m = \{1, 2, 3\}$ $y_{n+r} = x^2 + 8x + m$ $x^2 + (d-y)x - ym + m = 0$ $x = \frac{-(d-y) \pm \sqrt{y^2 + 10y + y^2 - 4ym - 4m}}{2}$ $\rightarrow y^2 + 10y + y^2 - 4m \geq 0$ $\rightarrow \Delta \leq 0 \Rightarrow y = -4 \pm \sqrt{34 - 10 - 4m}$	(1, 2) 6
$\left. \begin{array}{l} x \geq 2 \Rightarrow n \geq 2 \\ 0 \leq x < 2 \Rightarrow x^2 - 2m + 2 \\ x < 0 \Rightarrow x > 2 \end{array} \right\} \begin{array}{l} [2, +\infty) \\ [1, 2) \\ (2, +\infty) \end{array} \xrightarrow{U} [1, +\infty)$ $R_f = [1, +\infty)$ ✓	(2) 7
$\begin{array}{l} x \leq 0 \Rightarrow x^2 + 8x + 4 \quad (1) \\ x > 0 \Rightarrow [2m] - 2m \quad (2) \end{array}$ $\textcircled{1} \frac{-b}{2a} = -4 \Rightarrow x_{\min} \quad y_{\min} = -1 \quad [-1, +\infty)$ $\textcircled{2} -1 < [\square] - \square \leq 0 \quad (-1, 0]$ $\xrightarrow{U} R_f = [-1, +\infty)$ ✓	(2) 8
$\max R_f \Rightarrow a + 1 - \sqrt{2m+3} = a$ عددی قدری ہے سب سے بڑا $\max$ ہے if $\sqrt{2m+3} = 0 \Rightarrow a + 1 = a \Rightarrow a = 4$ ✓ $Df_{\min} \Rightarrow a - \sqrt{2m+3}$ min ہے $\sqrt{2m+3} = 0 \Rightarrow m = \frac{-3}{2} \Rightarrow b = \frac{-3}{2}$ ✓ $ab = 4 \Rightarrow \frac{-3}{2} \cdot \frac{-3}{2} = 4$ ✓	(2) 9
$f(0) = 4 \quad 4 + g(0) = 4 \quad g(0) = 0$ $f(1) = 4\sqrt{2} \quad 4\sqrt{2} + g(1) = 4\sqrt{2} \quad g(1) = \sqrt{2}$ $f(-1) = 4\sqrt{2} \quad 4\sqrt{2} + g(-1) = 4\sqrt{2} \quad g(-1) = -\sqrt{2}$ $R_g = [-\sqrt{2}, \sqrt{2}]$ $R_{f(x)} = \frac{f(x)}{4} - \frac{g(x)}{2} = [0, \sqrt{2}]$ ✓ $\frac{4}{4} - 0 = 1$ $\frac{4\sqrt{2}}{4} - \frac{\sqrt{2}}{2} = 0 \quad \min$ $\frac{4\sqrt{2}}{4} + \frac{\sqrt{2}}{2} = \sqrt{2} \quad \max$	(2) 10