

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۵ کلاس
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$$f(x) = \sqrt{1-x^2} \quad g = \{(-1,1), (0,1), (1,0), (1,1)\}$$

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$$f(1) = \sqrt{1-1} = 0 \quad f(0) = \sqrt{1-0} = 1 \quad f(-1) = \sqrt{1-1} = 0$$

$$g = \{(-1,0), (0,1), (1,0)\} \rightarrow f \circ g = \{(-1,0), (0,1), (1,0)\}$$

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$$f(x) = \frac{1}{x} \quad g(x) = \frac{1}{x} \quad h(x) = \frac{1}{x} \quad k(x) = \frac{1}{x}$$

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$$y = \frac{x^2}{x} + x + c$$

$$\frac{x^2}{x} + x + c = \frac{x^2}{x} + x + c \rightarrow \frac{x^2}{x} + x + c = \frac{x^2}{x} + x + c$$

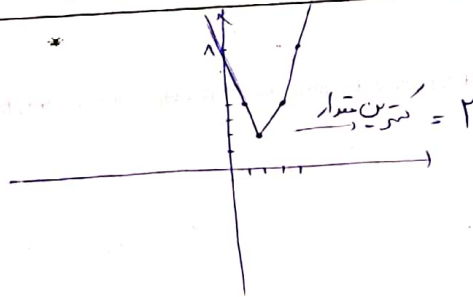
$$\sqrt{b-a} = \sqrt{3-(-1)} = \sqrt{4} = 2$$

$$a = -1, b = 3$$

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$$y = |x-1| + |x-2| + |x-3|$$

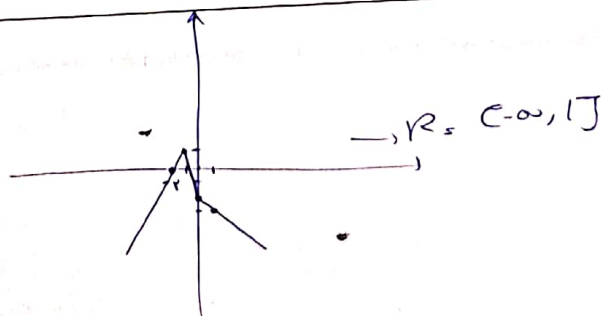
$$y = |x-1| + |x-2| + |x-3|$$



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

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$$y = \frac{x^2 + 2x + m}{x+1}$$

$$y^2 + y^2 = x^2 + 2x + m$$

$$x^2 + (2-y)x + m-y = 0 \quad (2-y)^2 - 4(m-y) = 0$$

$$\Delta \geq 0 \rightarrow (2-y)^2 - 4(m-y) \geq 0$$

$$\Delta \geq 0 \rightarrow (2-y)^2 - 4(m-y) \geq 0 \rightarrow -4m + 4 \geq 0 \rightarrow m \leq 1$$

اعداد طبیعی $m < 1 \rightarrow m = 0$
 $y = 2 \rightarrow x^2 + 2x + 0 = 0 \rightarrow x = 0, -2$
 $y = 1 \rightarrow x^2 + 2x + 1 = 0 \rightarrow x = -1$
 $m = 0 \rightarrow y = 2$
 $m = 1 \rightarrow y = 1$

$$f(x) = \begin{cases} x^2 + 2x + 1 & ; x \geq 0 \\ x^2 + 2x + 1 & ; x < 0 \end{cases} \rightarrow y = [0, +\infty)$$

$x = 0 \rightarrow y = 1$
 $x = -1 \rightarrow y = 0$
 $x = \frac{1}{2} \rightarrow y = \frac{5}{4}$
 $x = -\frac{1}{2} \rightarrow y = \frac{3}{4}$
 $y = [0, +\infty)$

$$f(x) = \begin{cases} x^2 + 2x + 1 & ; x \leq 0 \\ [x] - x & ; x > 0 \end{cases} \rightarrow y = [-1, +\infty)$$

$x = 0 \rightarrow y = 1$
 $x = -1 \rightarrow y = 0$
 $x = \frac{1}{2} \rightarrow y = \frac{3}{4}$
 $x = -\frac{1}{2} \rightarrow y = \frac{3}{4}$
 $y = [-1, +\infty)$

$$y = a + 1 - \sqrt{x^2 + c} \rightarrow x^2 + c \geq 0 \rightarrow x \geq \frac{c}{2}$$

$x \in [0, +\infty) \rightarrow \frac{c}{2} = \frac{3}{2}$
 $x \in (-\infty, 0] \rightarrow \frac{c}{2} = \frac{3}{2}$
 $a = \frac{3}{2} \rightarrow a = 1 - 0 = 1$

$$f(x) = 2\sqrt{x^2 + 1} + \sqrt{1-x^2} \rightarrow g(x) = 2\sqrt{x^2 + 1} - f(x)$$

$y = \frac{f(x)}{4} - \frac{g(x)}{c} = \frac{f(x)}{4} - \frac{1}{4} (2\sqrt{x^2 + 1} - f(x)) = \frac{f(x)}{4} - \frac{1}{2} \sqrt{x^2 + 1} + \frac{f(x)}{4} = \frac{f(x)}{2} - \frac{1}{2} \sqrt{x^2 + 1}$
 $x = -1 \rightarrow 0 + \sqrt{2} - \sqrt{2} = 0$
 $x = 1 \rightarrow \sqrt{2} + \sqrt{2} - \sqrt{2} = \sqrt{2}$
 $R = [0, \sqrt{2}]$