



$$f = \{(1, 2), (2, 3), (3, 1), (0, 0)\} \quad g = \{(-1, 1), (1, 1), (2, 3), (3, 0), (0, 2), (\sqrt{7}, 1)\}$$

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الف)  $\left(\frac{f+g}{f-g}\right)(1) = \frac{f(1)+g(1)}{f(1)-g(1)} = \frac{2+1}{2-1} = \boxed{3}$   $\left(\frac{f+g}{f-g}\right)(2) = \frac{f(2)+g(2)}{f(2)-g(2)} = \frac{3+3}{3-3} \Rightarrow$  تعریف نشده  
غ ق ق

ج)  $f(0)g(-1) = 0 \times 1 = \boxed{0}$

$$f(x) = \{(x, 1), (-1, 4), (0, 0), (-2, 2), (3, -1)\}$$

الف)  $g(x) = f(3x-1) \Rightarrow \left. \begin{array}{l} 3x-1=2 \Rightarrow x=1 \\ 3x-1=0 \Rightarrow x=\frac{1}{3} \\ 3x-1=-1 \Rightarrow x=0 \\ 3x-1=4 \Rightarrow x=\frac{5}{3} \\ 3x-1=-2 \Rightarrow x=-\frac{1}{3} \end{array} \right\} \Rightarrow g(x) = \{(1, 1), (0, 4), (\frac{1}{3}, 0), (\frac{5}{3}, -1), (-\frac{1}{3}, 2)\}$

ب)  $h(x) = f(|x|) \Rightarrow \left. \begin{array}{l} |x|=2 \Rightarrow x=\pm 2 \\ |x|=0 \Rightarrow x=0 \\ |x|=3 \Rightarrow x=\pm 3 \\ |x|=-1 \text{ غ ق ق} \\ |x|=-2 \text{ غ ق ق} \end{array} \right\} \Rightarrow g(x) = \{(2, 1), (-2, 1), (0, 0), (3, -1), (-3, -1)\}$