

کلاس دوم ریاضی A

تکلیف های روز

موضوع: تابع

1) $x f(x) \geq 0 \rightarrow \begin{cases} x > 0 \rightarrow x = 0, x = -2, 2, 4 \\ f(x) \geq 0 \rightarrow \begin{cases} x < 0 \rightarrow f(x) \leq 0 \rightarrow [-2, 0] \\ x > 0 \rightarrow f(x) \geq 0 \rightarrow [2, 4] \end{cases} \end{cases}$

Sign chart: $\begin{array}{c|c|c|c|c} -2 & 0 & 2 & 4 & \\ \hline - & + & - & + & - \end{array}$

$D = [-2, 0] \cup [2, 4]$

2) $\frac{-x}{f(x)} > 0 \rightarrow f(x) \neq 0$

Sign chart: $\begin{array}{c|c|c|c|c} -2 & -1 & 0 & 1 & 2 \\ \hline - & + & - & + & - \end{array}$

$f(x) = 0 \rightarrow x = -1, 0, 1$

$\frac{-x}{f(x)} > 0 \rightarrow x < -1 \text{ or } 0 < x < 1$

$\frac{-x}{f(x)} < 0 \rightarrow x > -1 \text{ or } x > 1$

3) $f(x) - 2f(2) = x^2 - 2x + 4 \rightarrow f(2) = 4 - 4 + 4 = 4$

$f(x) - 4 = x^2 - 2x + 4 \rightarrow f(x) = x^2 - 2x + 8$

$f(-2) = 4 + 4 + 8 = 16$

4) $v + p = 9 \rightarrow f(f(v)) + f(f(p)) = 18$

$f(1) = 1 + 2 = 3 \rightarrow f(3) = 3 + 1 = 4 \rightarrow f(4) = 4 + 1 = 5$

$f(2) = 2 + 2 = 4 \rightarrow f(4) = 4 + 1 = 5$

$f(3) = 3 + 2 = 5 \rightarrow f(5) = 5 + 1 = 6$

$f(4) = 4 + 2 = 6 \rightarrow f(6) = 6 + 1 = 7$

$f(5) = 5 + 2 = 7 \rightarrow f(7) = 7 + 1 = 8$

$f(6) = 6 + 2 = 8 \rightarrow f(8) = 8 + 1 = 9$

$f(7) = 7 + 2 = 9 \rightarrow f(9) = 9 + 1 = 10$

$f(8) = 8 + 2 = 10 \rightarrow f(10) = 10 + 1 = 11$

$f(9) = 9 + 2 = 11 \rightarrow f(11) = 11 + 1 = 12$

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$$f(x) = \{(2,1), (2,4), (-5,2), (1,-2)\} \quad (9)$$

$$الف) 2f(x) \rightarrow \{(2,2), (2,8), (-5,4), (1,-4)\}$$

$$ب) f(x)+1 \rightarrow \{(2,2), (2,5), (-5,3), (1,-1)\}$$

$$ج) 3f^2(x)+1 \rightarrow \{(2,4), (2,19), (-5,13), (1,17)\}$$

$$د) f\left(\frac{1}{x}\right) \rightarrow \left\{ (1,1), \left(\frac{1}{2},4\right), \left(-\frac{5}{2},2\right), \left(\frac{1}{2},-2\right) \right\}$$

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

$$f(x) = \{(2,3), (2,2), (1,4), (2,1), (2,2)\} \quad (10)$$

$$الف) f-g \rightarrow \{(2,2), (1,4), (2,2)\}$$

$$ب) \frac{f}{g} \rightarrow \left\{ (2,4), \left(\frac{1}{2}, \frac{4}{0}\right), (3,-2) \right\}$$

معرضه