

$$\frac{0}{+} \frac{0}{+} \rightarrow x f(x) \geq 0 \rightarrow \text{محدوده اول و سوم} = D_f = [-5, 0] \cup [2, 5]$$

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سوال ۱ (۲)

$$\frac{-x}{f(x)} \geq 0, f(x) \neq 0 \rightarrow x \neq -3, 2, 5$$

$$\begin{array}{c|c} (-) \times & \times \times \\ \hline -x \times \rightarrow +, - \Rightarrow \begin{array}{c} + \\ - \end{array} & \begin{array}{c} + \\ - \end{array} \\ f(x) \rightarrow +, - \Rightarrow \begin{array}{c} + \\ - \end{array} & \begin{array}{c} + \\ - \end{array} \end{array} \rightarrow D_f = (-3, 0] \cup (2, 5)$$

۲-۱-۲ و ۳-۲-۳ صحیح

۱۷ (۵)

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

سوال ۳

$$f(x) \wedge x^2 = x^2 - 2x + 4 \Rightarrow (x = -2) \Rightarrow f(2) = 2 + 4 \Rightarrow f(2) = 6$$

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$$\begin{aligned} f(1) \rightarrow (2 \times 1) + 3 &\Rightarrow \left\{ \begin{array}{l} f(5) = 5 - \sqrt{5+2} \Rightarrow \frac{2}{5} \text{ I} \\ f(5) \rightarrow 5 - \sqrt{5+2} = 2 \end{array} \right\} \rightarrow 2+2=4 \\ f(5) \rightarrow 5 - \sqrt{5+2} = 2 &\left\{ \begin{array}{l} f(2) = (2 \times 2) + 3 = 7 \text{ II} \end{array} \right\} \end{aligned}$$

سوال ۴ (۳)

$$\begin{aligned} \text{if } m=2 \rightarrow f(1) - f(2) &\quad f(m) = am^2 - bm + c \quad a - b + 2 - (4a - 2b + 2) \Rightarrow a - b + 2 - 4a + 2b - 2 = b - 3a = 14 \\ \text{if } m=3 \rightarrow f(2) - f(3) &\quad f(m) = am^2 - bm + c \quad 4a - 2b + 2 - (9a - 3b + 2) \Rightarrow 4a - 2b + 2 - 9a + 3b - 2 = b - 5a = 16 \end{aligned}$$

سوال ۵

$$\begin{aligned} -b + 3a = -14 \\ b - 5a = 16 \end{aligned} \rightarrow -2a = 4 \rightarrow a = -2, b = 10 \quad a - b \Rightarrow -2 - 10 \Rightarrow -12 \quad \text{بسیار جالبه!}$$

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سوال ۶

$$\frac{0}{\text{بسیار صاف و محرز}} = \frac{(n+2)^2 + 1}{(n+2)^2 + 3} \Rightarrow \frac{(\sqrt{3})^2 + 1}{(\sqrt{3})^2 + 3} \rightarrow \frac{4}{4} \Rightarrow \frac{2}{3}$$

سوال ۷

$$f\left(n - \frac{1}{n}\right) = n^2 + \frac{1}{n^2} \Rightarrow \left(n - \frac{1}{n}\right)^2 \rightarrow n^2 - \frac{2}{n} + \frac{1}{n^2} \Rightarrow f\left(n - \frac{1}{n}\right) = \left(n^2 + \frac{1}{n^2} - 3\right) + 2 = \frac{\left(n - \frac{1}{n}\right)^2 + 2}{n^2}$$

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$$(-3)^2 + 2 \rightarrow 11$$

سوال ۸

$$4 - x^2 \Rightarrow (2-x)(2+x) \geq 0 \quad -\frac{x}{x} + \frac{x}{x} \rightarrow [-2, 2]$$

$$\frac{9}{g} \rightarrow \left\{ \left(2, \frac{0}{\sqrt{5}}\right) \left(1, \frac{4}{\sqrt{5}}\right) \left(0, \frac{2}{\sqrt{5}}\right) \right\}$$

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$$\frac{9}{g} \rightarrow \left\{ \left(2, \frac{\sqrt{5}}{0}\right) \left(1, \frac{\sqrt{5}}{-4}\right) \left(0, \frac{3}{2}\right) \right\} \rightarrow \left\{ \left(1, \frac{\sqrt{5}}{-4}\right) \left(0, \frac{3}{2}\right) \right\}$$

$f(m) \rightarrow \{ \underbrace{(2, 2)} \underbrace{(3, 8)} \underbrace{(-5, 4)} \underbrace{(1, -4)} \}$
 $f(m) + 1 \Rightarrow \{ \underbrace{(2, 2)} \underbrace{(3, 8)} \underbrace{(-5, 4)} \underbrace{(1, -1)} \}$
سوال 19

$3f(m) + 1 \rightarrow \{ \underbrace{(2, 4)} \underbrace{(3, 49)} \underbrace{(-5, 13)} \underbrace{(1, 13)} \}$
 $f(2m) \Rightarrow \{ \cancel{(2, 1)} \cancel{(3, 4)} \cancel{(-5, 2)} \cancel{(1, 4)} \}$

$\text{استخراج بهای یکنم} \rightarrow \{ \overset{4-2}{(1, 4)} \overset{1+1}{(3, 2)} \} =$
 $\text{①} \frac{f-f}{9} = \{ \overset{13-1}{(1, 1)} \overset{4-1}{(3, -1)} \}$
سوال 10