

حلنا عرب
سوال ١

$$y = \sqrt{a f(m)} \quad m f(m) \geq 0 \quad D_f = [-5, 0] \cup [2, 5] \quad \begin{array}{c|c|c|c} -5 & 0 & 2 & 5 \\ \hline + & - & - & + \end{array}$$

سوال ٢

$$y = \sqrt{\frac{-m}{f(m)}} \quad \frac{-m}{f(m)} \geq 0 \quad \text{معاينة: } 0, 2, 5, -3$$

$$\begin{array}{c|c|c|c} -3 & 0 & 2 & 5 \\ \hline + & - & - & + \end{array}$$

مناطق: $-2, -1, 1$

سوال ٣

$$f(2) - 2f(2) = 4 - 2 + 2 \Rightarrow f(2) = -2$$

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

$$f(-2) = 1$$

سوال ٤

$$f\left(\frac{1}{\omega}\right) = 2 \quad f(1) = \omega \quad v + 2 = 9$$

$$f\left(\frac{1}{v}\right) = v \quad f(\omega) = \omega \sqrt{v} = 2 \quad f(2) = v$$

سوال ٥

$$f(n-1) - f(n) = 4n + 2 \Rightarrow a(n-1)^2 - b(n-1) + 2 - an^2 + bn - 2 = 4n + 2$$

$$an^2 + a - 2an - b + 2 + an^2 + bn - 2 = 4n + 2$$

$$a + b - 2an = 4n + 2$$

$$-2an = 4n \quad a + b = 2$$

$$-2a = 4 \quad -2 + b = 2 \Rightarrow b = 4$$

$$a = -2$$

$$-3 - 5 = -8$$

سوال ٦

$$\frac{(\sqrt{3}-2)^2 + f(\sqrt{3}-2) + 5}{(\sqrt{3}-2) + 2(\sqrt{3}-2) + 1} \Rightarrow \frac{3+4-4\sqrt{3}+2\sqrt{3}-1+5}{3+4-4\sqrt{3}+2\sqrt{3}-1+1} = \frac{6}{6}$$

سوال ٧

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

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

$$f(3) \Rightarrow n^2 + \frac{1}{n^2} - 2 = 9 \Rightarrow n^2 + \frac{1}{n^2} = 11$$

سوال ٨

الف) $\left\{ \left(0, \frac{2}{3}\right), (1, -\sqrt{2}), (2, 0) \right\}$

ب) $\left\{ \left(0, \frac{3}{2}\right), \left(1, -\frac{\sqrt{2}}{2}\right), \left(2, \frac{1}{2}\right) \right\}$

$$\frac{-4}{\sqrt{11}} \Rightarrow \frac{-4}{2\sqrt{2}} \Rightarrow \frac{-2 \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} = -\sqrt{2}$$

سوال ۹

$$\text{الف} \{ (2, 2), (3, 8), (-5, 4), (1, -4) \}$$

$$\text{ب} \{ (2, 2), (3, 5), (-5, 3), (1, -1) \}$$

$$\text{ج} \{ (2, 4), (3, 49), (-5, 13), (1, -13) \}$$

$$\text{د} \{ (1, 1), (\frac{3}{2}, 4), (-\frac{5}{2}, 2), (\frac{1}{2}, -2) \}$$

سوال ۱۰

$$\text{الف} \{ (2, 2), (1, 4), (3, 2) \}$$

$$\text{ب} \{ (2, 6), \cancel{(1, 4)}, (3, -2) \}$$

تعریف شده