

$$= \frac{f(3) - 2}{3 - 0} = \frac{10}{3} = 5$$

$$f'\left(\frac{3}{4}\right) \Rightarrow f'(x) = 1 \times \sqrt{4x+1} + (x+2) \frac{4}{2\sqrt{4x+1}}$$

$$\Rightarrow f'\left(\frac{3}{4}\right) = 1 \times \sqrt{4} + \frac{11}{4} \cdot \frac{2}{\sqrt{4}} = 2 + \frac{11}{4} = \frac{19}{4} \Rightarrow 5 - \frac{19}{4} = \frac{1}{4} = 0.25$$

سوال ۱۱۸: گزینه ۱

$$f'(0) = 0 \Rightarrow f'(x) = 12x^2 + 3ax^2 + 2bx + c \Rightarrow f'(0) = 0 \Rightarrow c = 0$$

$$f'(1) = f''(1) = 0 \Rightarrow 12 + 3a + 2b = 0$$

$$f''(x) = 24x + 6a + 2b \Rightarrow f''(1) = 0 \Rightarrow 24 + 6a + 2b = 0 \Rightarrow 3a + b = -12$$

$$\begin{cases} 3a + b = -12 \\ 3a + 2b = -12 \end{cases}$$

$$\Rightarrow b = 6 \Rightarrow a = -8$$

سوال ۱۱۹: گزینه ۳

$$f'(x) = \frac{(2x+2)(x-1)^2 - 2(x-1)(x^2+2x)}{(x-1)^2} = \frac{2(x-1)((x+1)(x-1) - (x^2+2x))}{(x-1)^2}$$

$$= \frac{2(x-1)((x^2-1) - (x^2+2x))}{(x-1)^2} = \frac{2(x-1)(-2x-1)}{(x-1)^2} \Rightarrow x = -\frac{1}{2} \text{ طول مینیمم مطلق}$$

$$\text{فاصله: } x=1 \rightarrow 1 - \left(-\frac{1}{2}\right) = \frac{3}{2} \text{ مجانب قائم}$$