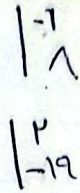
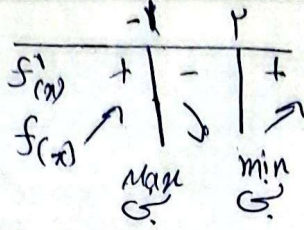


$$f'(x) = 4x^2 - 4x - 12$$



$$m = \frac{1 - (-19)}{-1 - 2} = -9$$

$$4x^2 - 4x - 12 + 9 \Rightarrow 4x^2 - 4x - 3$$

$\Delta > 0 \Rightarrow$ اولی و ثانی
در a, b, c در AB

$$\frac{-b}{2a} = \frac{-1-2}{2 \cdot 4} < 0 \quad \frac{-1}{-1+1}$$

$$x = \frac{-K-1}{2K} \xrightarrow{\text{نیز در } x} -\frac{K+1}{2K} < 0 \rightarrow \frac{-1}{-1+1} \rightarrow K < -1, K > 0 \text{ (I)} \quad \text{(I) \& (II)} \rightarrow K > 0$$

$$\rightarrow -\frac{K+1}{2K} K + K + 1 > 0 \rightarrow -\frac{K+1}{2} + K + 1 > 0 \rightarrow \frac{K+1}{2} > 0 \rightarrow K > -1 \text{ (II)}$$

$$y' = 3x^2 + 2ax + b$$

$$x = -1 \Rightarrow f(-1) = -1 + a - b - 1 = -2 \quad a - b = -2$$

$$\text{نیز } x = -\frac{b}{2a} \rightarrow x = -\frac{a}{3} \rightarrow -\frac{a}{3} = -1 \rightarrow a = 3$$

$$\frac{a}{b} = \frac{3}{2}$$

$$-2 = -1 + 3 - b - 1 \rightarrow b = 2$$

$$f'(x) = 3x^2 + 2ax + b$$

$$f(x) = x^3 + ax^2 + b$$

$$f'(x) = 3x^2 + 2ax$$

$$(0, 2) \Rightarrow C = 2$$

$$(0, 0) \Rightarrow f(x) = -\frac{1}{3}ax^3 + \frac{2}{9}ax^2 + C$$

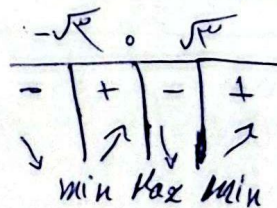
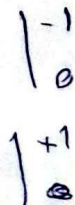
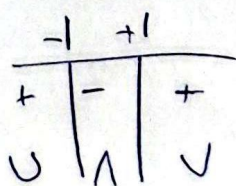
$$(0, 0) \Rightarrow f'(x)$$

$$x(3x + 2a) = 0 \Rightarrow x = 0 \text{ or } x = -\frac{2a}{3}$$

$$\frac{f'(-\frac{2a}{3})}{3} = -\frac{2}{3} \Rightarrow a = 3$$

$$f'(x) = 3x^2 - 12x = 3x(x - 4)$$

$$f'' = 6x - 12$$



اولی و ثانی
در a, b, c در AB

