

$$y = -x^p + px^p + b \rightarrow y' = -px^{p-1} + 4px \xrightarrow{x=1} -p - 4a = 0 \rightarrow 4a = -p \rightarrow a = -\frac{p}{4}$$

$$\begin{aligned} (-1, 1) \} & 1 + \frac{p}{4} + b = 1 \rightarrow b = -\frac{p}{4} \\ & \frac{b}{a} = \frac{-\frac{p}{4}}{-\frac{p}{4}} = 1 \end{aligned}$$

$$y = \frac{p}{4}x^p + x + \frac{a}{4} \quad \text{Min} \left| \begin{aligned} \frac{dy}{dx} &= \frac{p}{4}x^{p-1} + 1 \\ \frac{p}{4}x^{p-1} + 1 &= 0 \end{aligned} \right.$$

$$\frac{a}{a+1} = \frac{p}{4} \rightarrow pa = 4a + 4 \rightarrow a = 4$$

$$y = \frac{p}{4}x^p + x + \frac{a}{4} = 0 \Rightarrow px^p + 4x + 1 = 0 \Rightarrow px^p = -4x - 1$$

$$x = -\frac{1}{p}$$

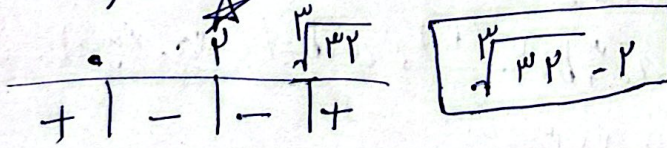
$$\text{بالتالي } \frac{b}{a} = \frac{p}{4} \rightarrow b = 14$$

$$1 - \frac{1}{4}a + 1 = p - \frac{a}{4} = 0 \rightarrow \frac{a}{4} = p \rightarrow a = 4$$

$$\frac{b}{a} = p$$

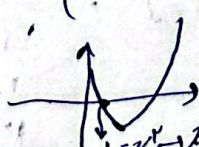
$$f'(x) = \frac{px^p(x^p - 1) - px^p(x^p)}{(x^p - 1)^2} = \frac{px^{2p} - px^{2p} - px^{2p}}{(x^p - 1)^2} = \frac{-px^{2p}}{(x^p - 1)^2}$$

$$x^p(x^p - 1) = 0 \rightarrow x^p = 1 \rightarrow x = \sqrt[p]{1}$$



$$\frac{px^p(x^p - 1) - px^p(x^p)}{(x^p - 1)^2} = \frac{px^{2p} - px^{2p} + 4x}{(x^p - 1)^2} = 0$$

$$px^p(x^p - 1) - px^p(x^p) + 4x = 0$$



$$\frac{4x}{(x^p - 1)^2} = 0 \rightarrow 4x = 0 \rightarrow x = 0$$

$$\Delta = 16 - 4(1)(1) = 12 \quad \frac{4 \pm \sqrt{12}}{2} = 2 \pm \sqrt{3}$$

$$x = 2 \pm \sqrt{3} \rightarrow x = \pm \sqrt{4 \pm \sqrt{12}} = \pm \sqrt{4 \pm 2\sqrt{3}}$$