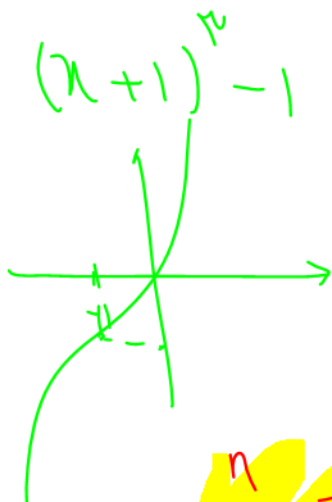


$$\gamma = x^n \longrightarrow \gamma = a(x-m)^r + n$$

$$\gamma = x^n + r x^{n-1} + r x^{n-2} + \dots - 1$$



$$(x \pm 1)^n = x^n \pm n x^{n-1} + \dots$$

$$(x \pm r)^n = x^n \pm n x^{n-1} + \dots$$

$$x^r + \gamma^r \neq$$

$$x^r - \gamma^r = (x - \gamma)(x + \gamma)$$

$$x^n - \gamma^n = (x - \gamma)(x^{n-1} + x^{n-2}\gamma + \dots + \gamma^{n-1})$$

$$\text{on } x^n + \gamma^n = (x + \gamma)(\dots)$$

$$\text{on } x^n - \gamma^n = (x - \gamma)(\dots)$$

$$Q_{in} \Delta = Q_{in} 0 \quad \left\{ \begin{array}{l} \Delta = rK\pi + 0 \\ \Delta = rK\pi + \pi - 0 \end{array} \right.$$

$$Q_{in} \Delta = 0 \longrightarrow \Delta = K\pi$$

$$\cos \Delta = \cos 0 \longrightarrow \Delta = rK\pi \pm 0$$

$$\cos \Delta = 0 \longrightarrow \Delta = K\pi + \frac{\pi}{2}$$

$$\tan \Delta = \tan 0 \longrightarrow \Delta = K\pi + 0$$

$$\tan \Delta = 0 \longrightarrow \Delta = K\pi$$

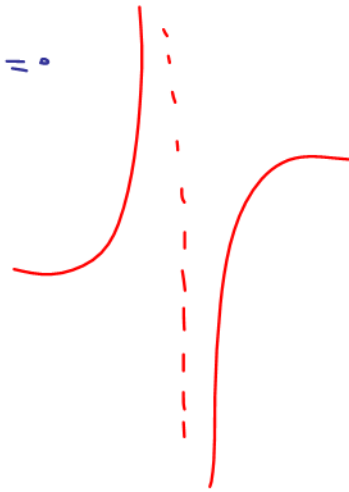
$$y = \frac{r_n - 1}{n^r + r_n}$$

$$\left(\frac{1}{x} \right)' \rightarrow \frac{0}{x^2} = 0 \quad \text{مخرج 0، بسط 0، 0/0}$$

$$n(n^r + r) = 0 \quad n = 0$$

$$l. \lim_{n \rightarrow 0^+} \frac{r_n - 1}{n(n^r + r)} = \frac{-1}{0^+} = -\infty$$

$$p. \lim_{n \rightarrow 0^-} \frac{r_n - 1}{n(n^r + r)} = \frac{-1}{0^-} = +\infty$$



$$n = a \text{ من } f \rightarrow f \sim \frac{1}{x} \quad l. f(n) = f(a) \quad n \rightarrow a$$

$$y = \begin{cases} |n| & n < 0 \\ n^r & n \geq 0 \end{cases} \quad \text{في } n=0$$

$$f'_+(a) = f'_-(a) \quad \xrightarrow{\sim f} \quad l. f = p. f = f(0) = 0$$

$$l. \lim_{n \rightarrow 0^-} \frac{|n|}{n} = l. \lim_{n \rightarrow 0^-} \frac{-n}{n} = -1$$



$$f(n) = (n^r + 1)^r \sqrt{r_n + r}$$

$$u^n \rightarrow n u^{n-1} \times u' / \sqrt{u} = \frac{u'}{r \sqrt{u}}$$

$$r(n^r + 1)(n^r) \sqrt{r_n + r} + \frac{r(n^r + 1)^r}{r \sqrt{r_n + r}}$$

$$2 \sin^2 x + \cos(x)$$

$$+g u \rightarrow u'(1+g'u)$$

$$2 \sin^2 x \cos(x) + (x) (1+g'u)$$

$$y = x^2 - 12x$$

$$[-1, 2]$$

الترتيب صليقي $\rightarrow x^2 - 12 = 0$ $\begin{cases} x = 2 \\ x = -2 \end{cases}$

$$f(2) = -12$$

$$f(-1) = 11$$

$$f(3) = -9$$

$$\text{Max, Min} \rightarrow 11$$

$$y = x^2 + ax + b + c$$

$$y' = 2x + a + b$$

$$(x, y) \rightarrow \text{الترتيب}$$

$$f(x) = y$$

$$f'(x) = 0$$

$$(3, -1)$$

الترتيب

$$x = 1 \text{ عطف}$$

$$27 + 9a + 3b + c = -1$$

$$27 + 2a + b = 0$$

$$2 + 2a = 0$$

$$a = -1$$

$$y' = 2x + 2a$$

$$\begin{cases} f(x) = y \\ f''(x) = 0 \end{cases}$$

$$y = (x+1)(x-2)^2 \rightarrow x^3 - x^2 + 12x + 2x^2 - 12x + 4 = x^3 - x^2 + 12$$

$$y = x^3 - 2x^2 + 12x$$

$$n. \text{E} \rightarrow 12 \rightarrow 0$$

$$y' = 3x^2 - 4x = 0$$

$$3x(x-2) = 0 \Rightarrow \begin{cases} x=0 \\ x=2 \end{cases}$$

$$y'' = 6x - 4 = 0 \Rightarrow x = \frac{2}{3}$$

	0	2	2
y'	+	-	+
y''	-	+	+
y	12	16	0
	Max	Min	Min

