

19, 5

بما أن $\frac{1}{x} > 0$

$$\begin{aligned} y^x - x^y = x - 1 &\leadsto y_1^x = x^y + x - 1 \\ y_2^x &= x^y + x - 1 \end{aligned} \left\{ \begin{aligned} &\leadsto y_1^x = y_2^x \leadsto y_1 = y_2 \leadsto \text{حالة خاصة} \\ &\text{منه} \end{aligned} \right.$$

$$x \cos y = y \cos x \leadsto x = \pi/2 \rightarrow \pi/2 \cos y = 0 \leadsto \text{الحل هو } y = \pi/2$$

منه $\pi/2$ هو الحل الوحيد

$$y = \frac{x+y}{2} = \sqrt{xy} \rightarrow x+y = 2\sqrt{xy} \rightarrow x+y - 2\sqrt{xy} = 0$$

$$(\sqrt{x} - \sqrt{y})^2 = 0 \leadsto \sqrt{y} = \sqrt{x} \leadsto y = x \leadsto \text{حالة خاصة}$$

$$xy^x + x - y^x - xy = 0 \leadsto x(y^x + 1) - y(y^x + 1) = 0$$

$$(x^x + 1)(x - y) = 0 \leadsto x - y = 0 \leadsto y = x \leadsto \text{حالة خاصة}$$

$$|y| + x^x = 2y \leadsto \begin{cases} y \geq 0 \rightarrow y + x^x = 2y \rightarrow y = x^x \\ y < 0 \rightarrow -y + x^x = 2y \rightarrow y = \frac{x^x}{3} \end{cases} \leadsto \text{حالة خاصة}$$

$$[y] + [x] = 1$$

$$\begin{aligned} \xrightarrow[n=1]{\text{نقطة}} [y] = \frac{1}{n} \leadsto [y] = 0 \leadsto 0 \leq y < 1 \end{aligned}$$

حالة خاصة

$$\gamma_{\pi^0} - b$$

$$\begin{aligned} |n-1| &\geq 2 \\ 0 &\leq n \leq 3 \end{aligned}$$

γ $\rightarrow \nu$

$$\Rightarrow x = 4 \Rightarrow 4x - b = a + 4 \Rightarrow a + b = 14 \quad \checkmark$$

$$f(x) = \sqrt{a - bx - x^2} \Rightarrow a - bx - x^2 \geq 0$$
$$\Rightarrow x^2 + bx - a \leq 0$$

μ_k

②

$$x_1 + x_2 = \frac{-b}{1} \xrightarrow{[b, a]} b + a = -b \text{ oder } a = -2b \quad \textcircled{1}$$

$$n, n_r = \frac{a}{1} \rightsquigarrow ab = -a \longrightarrow b = -1 \stackrel{C}{\longrightarrow} a = r \checkmark$$

$$a+b = 4-1 = 1 \checkmark$$

دالة لا تساوي صفر $\rightarrow a=0 \rightarrow bx+c > 0$
 دالة غير صفية

$\leftarrow \omega$

$$n=2 \rightarrow r b + e = 0 \rightarrow e_2 - r b \checkmark$$

$b_n - 2b > 0 \rightarrow$ وجود n هم‌متغی $\frac{1}{n}$ می‌باشد
 b باید متغی باشد یا تو صفر باشد

$$v_d + e - v_1 b_1 = -v b - v(-b) = b$$

$$g = \frac{1}{\sqrt{[2x - \frac{1}{y}] + [2x + \frac{3}{y}]}} \leadsto [2x - \frac{1}{y}] + [2x + \frac{3}{y}] > 0 \leadsto \quad (r) \quad \leftarrow 9$$

$$[2x - \frac{1}{y}] + [2x + \frac{3}{y}] + 2 - 2 > 0 \leadsto [2x + \frac{3}{y}] + [2x + \frac{3}{y}] - 2 > 0 \leadsto$$

$$2[2x + \frac{3}{y}] - 2 > 0 \xrightarrow{\div 2} [2x + \frac{3}{y}] - 1 > 0 \leadsto [2x + \frac{3}{y}] > 1 \rightarrow$$

$$2x + \frac{3}{y} \geq 2 \leadsto 2x \geq \frac{1}{y} \leadsto x \geq \frac{1}{y} \rightarrow D = [\frac{1}{y}, +\infty) \quad \checkmark$$

$$g = \sqrt{1 - \log(2x - a)} \quad D = (b, c] \quad c - b = ? \quad (r) \quad \leftarrow 10$$

$$2x - a > 0 \leadsto 2x > a \leadsto x > \frac{a}{2}$$

$$1 - \log(2x - a) \geq 0 \leadsto \log(2x - a) \leq 1 \leadsto 2x - a \leq 10^1 \rightarrow 2x \leq 10 + a$$

$$x \leq \frac{10 + a}{2}$$

$$b = \frac{a}{2} \quad c = \frac{10 + a}{2} \leadsto c - b = \frac{10 + a}{2} - \frac{a}{2} = \frac{10}{2} = 5 \quad \checkmark$$

۲- طرف چپ تساوی همواره مثبت است پس طرف راست هم باید مثبت باشد: $y > 0$

$$(الف) \quad |y| + x^2 = 2y \xrightarrow{y > 0} y = x^2$$

