

B. جزئی

14, 25

خبرنامه

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③

$$x=1 \rightarrow 1+a+b=0 \Rightarrow a+b=-1$$

$$x=1 \rightarrow 1-a+b=0 \Rightarrow a-b=1 \quad \text{با } a=\varepsilon \rightarrow a=\varepsilon \quad b=-1-\varepsilon$$

$$\Rightarrow \left| \frac{b-\varepsilon a}{\varepsilon} \right| = \left| \frac{-1-\varepsilon-\varepsilon}{\varepsilon} \right| = \left| \frac{-1-2\varepsilon}{\varepsilon} \right| = -1 \quad \checkmark$$

④

$$\lim_{x \rightarrow 1} \frac{f(x)-f(1)}{x-1} = \frac{f(x)-1}{x-1} = 1 \rightarrow \frac{f(x)-1}{x-1} = 1 \Rightarrow a=1$$

$$\text{و } b = -\frac{f(x)-1}{x-1} \rightarrow b = -1 \Rightarrow b = -1$$

$$\Rightarrow ab = -1$$

1, 0

⑤

$$f(x) = a + b + b[a] + a[n] + b[a] \quad \text{و } \lim_{x \rightarrow 0^+} f(x) = a + b + b[a]$$

$$\Rightarrow a + b + b[a] = b[a] \Rightarrow a = -b$$

$$\Rightarrow \frac{a[a]}{b[a]} = -1 \quad \checkmark$$

$$\lim_{x \rightarrow 0^-} f(x) = a + b + b[a] - a - b$$

⑥

⑦

$$f(x) = \frac{a}{f(b)} = \frac{a}{-1-a} = -\frac{1}{1+a}$$

⑧

⑨

$$\frac{0}{0} \xrightarrow{\text{Hof}} \frac{f(x)+m}{x-a} = \frac{f(x)+m}{x-a} \xrightarrow{x=a} \frac{f(a)+m}{a-a}$$

1, 18

$$a^r + m a + n = 0$$

$$a^r + a m = 0 \rightarrow (a^r + m) a = 0 \Rightarrow m = -a^r$$

$$f(a) = 0 \xrightarrow{a \neq a} \varepsilon a^r + \varepsilon a m + n = 0$$

$$a \neq a$$

$$-a^r = \varepsilon - \varepsilon a \Rightarrow \left[a = -1, m = 1, n = 1 \right] \Rightarrow n - m = 1 - 1 = 0$$

$$\cos \sim \frac{f(x)}{g(x)} \Rightarrow 1-a = \frac{r}{a} - 1 \Rightarrow a < \frac{r}{r-1} \quad (7)$$

$$b \sin\left(\frac{\pi}{a}\right) = -1 \Rightarrow a = \frac{r}{r}, b = 1 \Rightarrow \frac{a}{b} = \frac{r}{r} \quad (1,0)$$

$$f(x) = \frac{|x-1| \cdot |x+m+1|}{|x-1| (m|x+1|+1)} \xrightarrow{x \rightarrow -1} \frac{|m+1|}{r_{m+1}} = \frac{m+r}{r_{m+1}} = \frac{m}{m+r} \Rightarrow m = \frac{r}{-1} \quad (8)$$

$$\lim_{x \rightarrow \frac{1}{m}} f(x) \quad \lim_{x \rightarrow -1} f(x) = -1 \quad \checkmark$$

$$\lim_{x \rightarrow \frac{1}{\varepsilon}} f(x) = \frac{V}{\wedge}$$

$$a(r_{a+m}-r) = 0 \Rightarrow m = r - ra \Rightarrow f(x) = \frac{\sqrt{r} |a(x+1)|}{(x-a)^r} \quad a+1=0 \Rightarrow a=-1 \quad (9)$$

$$x^r + (r-ra-r)x + ar = (x-a)^r$$

$$\Rightarrow \lim_{x \rightarrow 1} \frac{r(-x-1)}{(x+1)^r} = \frac{r}{|x+1|} = +\infty \quad (1,8)$$

$$\lim_{x \rightarrow 0} f(x) = \frac{x+1}{x+a} = \frac{ra-1}{ra+r} = \frac{1}{a} \Rightarrow a < \frac{r}{\frac{1}{r} - \frac{1}{r}} \quad (10)$$

$$\Rightarrow \lim_{x \rightarrow \frac{1}{r}} f(x) = \frac{\frac{1}{\varepsilon} + \frac{1}{r}}{\frac{1}{\varepsilon} + 1} = \frac{r}{\omega} \quad \checkmark$$

۱- عدد a باید تنها ریشه‌ی زیر را میسر باشد و مفروضه را هم صرفه‌کنند!

$$\Delta = 0 \rightarrow (m+3)^2 - 4 \times 4 \left(\frac{m}{4}\right) = m^2 - 4m + 9 = 0 \rightarrow \boxed{m = 3}$$

$$\lim_{n \rightarrow a} \frac{\sqrt{4(n^2 + n + \frac{1}{4})}}{|2n^3 + a^3|} = \frac{\sqrt{4|n + \frac{1}{4}|}}{|2n^3 + a^3|} \leadsto 2a^3 + a^3 = 0 \Rightarrow a = 0 \quad (\text{مفروضه مفروضه و حدت عدد است})$$

$$\leadsto a = -\frac{1}{4} \checkmark \leadsto \frac{\sqrt{4|n + \frac{1}{4}|}}{|2n^3 - \frac{1}{4}|} = \frac{2\sqrt{4}}{3}$$

$$\frac{2 \tan b}{\sqrt{-(-\frac{1}{4})}} = \frac{2\sqrt{4}}{3} \leadsto \tan b = \sqrt{\frac{3}{4}} \rightarrow b = \frac{\pi}{4}$$

۳- تابع در $x=1$ پیوسته از راست و $x=5$ پیوسته از چپ دارد!

$$f(1) = \tan \frac{\pi}{4} = -1$$

$$\lim_{n \rightarrow 1^+} \frac{|n^2 + n - 2|}{a(1-n)} = \frac{(n+2)(n-1)}{-a(1-n)} = -1 \leadsto \frac{3}{a} = 1 \leadsto a = 3$$

$$f(5) = b(5 - [-5]) = 1 \cdot b \quad \lim_{n \rightarrow 5^-} \frac{|25 + 5 - 2|}{3(1-n)} = -\frac{28}{12} = -\frac{7}{3}$$

$$\leadsto b = -\frac{7}{3} \leadsto ab = -\frac{7}{3} \times 3 = \boxed{-7}$$

$$f(2a) = 0 \rightarrow x = 2a \quad \checkmark \text{ ریشه‌ی صورت}$$

$$x = a \rightarrow \text{نقطه‌ی پیوسته} \quad f(a) = 2 \quad \checkmark \text{ ریشه‌ی مخرج}$$

$$f(n) = \frac{(n-a)(n-2a)}{-(n-a)} = 2 \rightarrow a = 2$$

$$n) = \frac{n^2 - 4n + 4}{-(n-2)} \leadsto m = -4 \leadsto m - n = 14 \leadsto n = 18$$

$$\lim_{z \rightarrow 2^+} f(z) = (1-a)[2^+] + (ra^r - 1)[-2^+] = (1-a)2 + (ra^r - 1)(-2-1)$$

$$\lim_{z \rightarrow 2^-} f(z) = (1-a)[2^-] + (ra^r - 1)[-2^-] = (1-a)(2-1) + (ra^r - 1)(-2)$$

$$\lim_{z \rightarrow 2^+} f(z) = \lim_{z \rightarrow 2^-} f(z) \leadsto \cancel{2} - \cancel{a} \cancel{z} - \cancel{ra^r} \cancel{z} - \cancel{ra^r} + \cancel{2} + 1 = \cancel{2} - 1 - \cancel{a} \cancel{z} + a - \cancel{ra^r} \cancel{z} + \cancel{2}$$

$$a - 1 = 1 - ra^r \leadsto a = -1 \quad \therefore \quad a = \frac{r}{r}$$

$$b \sin\left(\frac{\pi}{r}\right) = -b \leadsto -b = -\frac{1}{r} \leadsto b = \frac{1}{r} \leadsto \boxed{\frac{a}{b} = r}$$

$$u = a \cos \frac{\pi}{r}, \leadsto a^r + a = 0 \leadsto a = 0 \quad \checkmark$$

$$a^r + a(n-r) + a^r = 0 \leadsto a = -1 \quad \checkmark$$

$$-1 - n + r + 1 = 0 \leadsto n = r$$

$$\lim_{n \rightarrow -1} \frac{\sqrt{r}|-n-1|}{|n^r+1|} = \frac{\sqrt{r}}{|n^r-n+1|} = \frac{\sqrt{r}}{r}$$