

$$(a-b)^k (a+b)^k = (a^2 - b^2)^k$$

$$\frac{124}{\sqrt{5}}$$

$$= (\sqrt{\sqrt{4} - 2} - \sqrt{\sqrt{4} + 2})^k$$

$$= (\sqrt{4} - 2 + \sqrt{4} - 2\sqrt{4-k})^k$$

$$= (2\sqrt{4} - 2\sqrt{2})^k = 2^k (1 - \sqrt{2})^k$$

$$= 14(2 - \sqrt{2})$$

$$\sqrt{x} = t \Rightarrow (t^2 + \frac{1}{t^2} + 1)(t^2 - 1) = 2t$$

$$\frac{127}{\sqrt{5}}$$

$$\frac{(t^2 + t^2 + 1)(t^2 - 1)}{t^2} = 2t \Rightarrow t^4 - 1 = 2t^2$$

$$\Rightarrow t^4 - 2t^2 - 1 = 0$$

$$t^2 = 1 \pm \sqrt{2} \Rightarrow \begin{matrix} x_1 = 1 + \sqrt{2} \\ x_2 = 1 - \sqrt{2} \end{matrix} \Rightarrow x_1 + x_2 = 2$$

$$x^k + x = \omega \Rightarrow x(n+1) = \omega \Rightarrow x+1 = \frac{\omega}{x}$$

$$\frac{128}{\sqrt{5}}$$

$$\frac{1}{(x_1+1)^k} = \frac{x_1^k}{125} \Rightarrow P = \frac{(x_1, x_2)^k}{125^k} = \frac{-1}{125}$$

$$\frac{1}{(x_2+1)^k} = \frac{x_2^k}{125} \Rightarrow S = \frac{(x_1+x_2)^k - x_1^k x_2^k (x_1+x_2)}{125} = \frac{-4}{125}$$

$$x^r + \frac{14}{170}x - \frac{1}{170} = 0$$

$$170x^r + 14x = 1$$

$$f_{\text{cm}} = 14x \frac{\left(\frac{1}{14}\right)^r \text{Sin}^r \pi x}{\text{Sin}^r \pi x}$$

$$\frac{179}{x}$$

$$f\left(\frac{\pi}{174}\right) = \frac{1}{14} x \left(\frac{\text{Sin} \frac{\pi x}{174}}{\text{Sin} \frac{\pi}{174}}\right)^r = \frac{1}{14} \left(\frac{\frac{\sqrt{r}}{r}}{\text{Sin} \frac{\pi}{174}}\right)^r$$

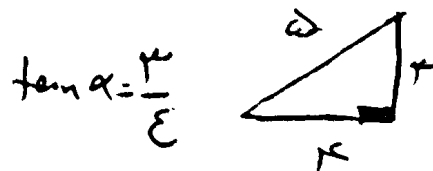
$$= \frac{1}{14} x \frac{r/r}{1 - \sqrt{r}/r} = \frac{r}{174} x \frac{r}{r - \sqrt{r}} = \frac{1}{14} x \frac{r}{r - \sqrt{r}}$$

$$= \frac{4 + r\sqrt{r}}{14}$$

$$\frac{\text{Sin} r\alpha - \text{Cos} \alpha}{\text{Cos} (r\alpha)} = (r \text{Sin} \alpha \text{Cos} \alpha - \text{Cos} \alpha) x \tan \alpha \frac{170}{r}$$

$$= \text{Cos} (r \text{Sin} \alpha - 1) x \frac{r \tan \alpha}{1 - \tan^2 \alpha}$$

$$= (r \text{Sin} \alpha - 1) x \frac{r \text{Sin} \alpha}{1 - \tan^2 \alpha}$$



$$\text{Sin} \alpha = \frac{r}{\omega} \rightarrow r \left(-\frac{r}{\omega} - 1\right) x \frac{-r}{\omega}$$

$$= \frac{\frac{44}{170}}{\frac{1}{14}} = \frac{1054}{170}$$

$$1 - \sin^2 x - \sin^2 x \cos(2x) = 1$$

۱۳۱
گیا

$$\rightarrow \sin^2 x (1 + \cos 2x) = 0$$

$$\left\{ \begin{array}{l} \sin x = 0 \rightarrow x = 0, \pi, 2\pi \\ \text{or} \\ \cos 2x = -1 \\ \Rightarrow 2x = (2k+1)\pi \end{array} \right.$$

سہا جوا۔ دیکھو ✓

$$x = \frac{(2k+1)\pi}{2}, \pi/2, 3\pi/2$$

صدق نمی کند $x=0 \rightarrow$ در حل من
صدق نمی کند $x=2 \rightarrow$

۱۳۲
گیا

$$* x^2 - x - 2 > 0$$

دیا حل تشریحی :

$$(x-2)(x+1) > 0 \rightarrow x > 2 \text{ یا } x < -1$$

∩
→

$$* x^2 - 1 \geq 0 \rightarrow x \geq 1 \text{ یا } x \leq -1$$

$$(-\infty, -1) \cup (2, +\infty)$$

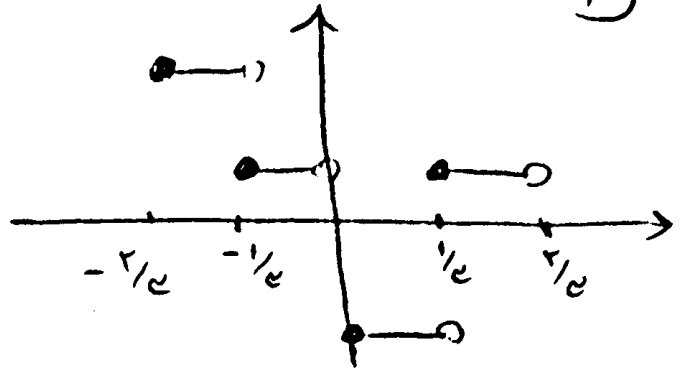
$$y = r \cdot | [r^n] | - 1$$

$$0 \leq x < \frac{1}{2} \rightarrow y = -1$$

$$\frac{1}{2} \leq x < \frac{3}{2} \rightarrow y = 1$$

$$-\frac{1}{2} \leq x < 0 \rightarrow y = 1$$

$$-\frac{3}{2} < x < -\frac{1}{2} \rightarrow y = r$$



$$x = \sqrt{y+r} - \sqrt{y-r}$$

$$x^2 = y+r + y-r - 2\sqrt{y^2-9}$$

$$ry = ry - 2\sqrt{y^2-9} \Rightarrow \sqrt{y^2-9} = 0 \Rightarrow y = \pm r$$

$$y = r, \quad x = \sqrt{4} \rightarrow A(\sqrt{4}, r)$$

$$d = \sqrt{x^2 + y^2} = \sqrt{(\sqrt{4})^2 + (r)^2} = \sqrt{4+9} = \sqrt{13}$$

$$\frac{r^n (1 + r + r^2 + \dots + r^{\omega})}{r^{n-r} (1 + r + r^2 + \dots + r^{\omega})} = \omega r$$

سواء كان

⇒

$$\frac{r^n \left(\frac{r^{\omega+1} - 1}{r - 1} \right)}{r^{n-r} (4r)}$$

$$\rightarrow \frac{r^{\omega+1} - 1}{r - 1}$$

⇒

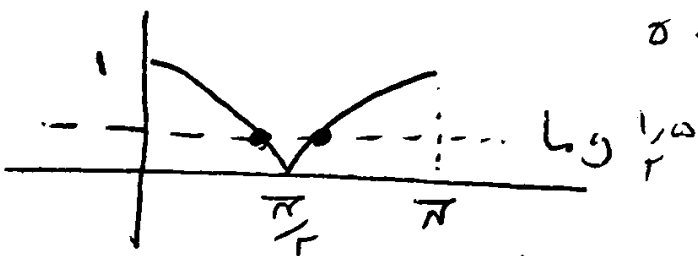
$$\frac{\mu^n \left(\frac{VFA}{r} \right)}{r^{n-r} (Y_C)} = \frac{\mu Y F_X \mu^n}{Y_C X r^{n-r}} = \Delta r$$

$$\mu^n = 9 X \mu^{n-r} \implies \underline{\underline{n = r}}$$

$$y = r \quad \begin{matrix} |\sin x| \\ \longrightarrow r \end{matrix} \quad \begin{matrix} |\sin(x - \frac{\pi}{r})| \\ - \frac{\pi}{r} = 0 \end{matrix} \quad \frac{1 \mu y}{\mu} = 0$$

$$r = \frac{\mu}{r} \rightarrow |\cos x| = \log \frac{1}{r}$$

$$0 < \log \frac{1}{r} < 1$$



$$\underline{\underline{\frac{1}{r}}}$$

$$\log_y x - \frac{r}{\log_y x} = 1$$

152

$$(\log_y x)^r - \log_y x - r = 0$$

$$(\log_y x - r)(\log_y x + 1) = 0 \quad \left\{ \begin{array}{l} \log_y x = -1 \rightarrow y = \frac{1}{x} \\ \log_y x = r \rightarrow y = x^r \end{array} \right.$$

$$\lim_{x \rightarrow +\infty} \left(\sqrt{x} \left(\sqrt{\frac{r x + 1}{x^r + x}} - \sqrt{\frac{1}{x^r (x^r + 1)}} \right) \right)$$

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$$\lim_{x \rightarrow +\infty} \left(\sqrt{\frac{r x^r + x}{x^r + x}} - \sqrt{\frac{1}{x(x^r + 1)}} \right) \Rightarrow \sqrt{r} - 0 = \sqrt{r}$$

سليم

$$\lim_{x \rightarrow \frac{\pi}{4}^-} [r \sin x - 1] = [0^-] = -1$$

154

$\rightarrow y' > 0$ صعودی

$$y = r + \sqrt{x-1} \rightarrow y = (x-r)^2 + 1 ; x \geq r$$

155

$$\frac{\text{مخرج، 2}}{\text{مخرج، 2}} y = (x-r)^2 - r = g(x)$$

$$\Rightarrow g(r) = -r$$

$$g(x) = \begin{cases} 1 & x > 0 \\ 0 & x = 0 \\ -1 & x < 0 \end{cases} \quad f(x) = 1 - x^2$$

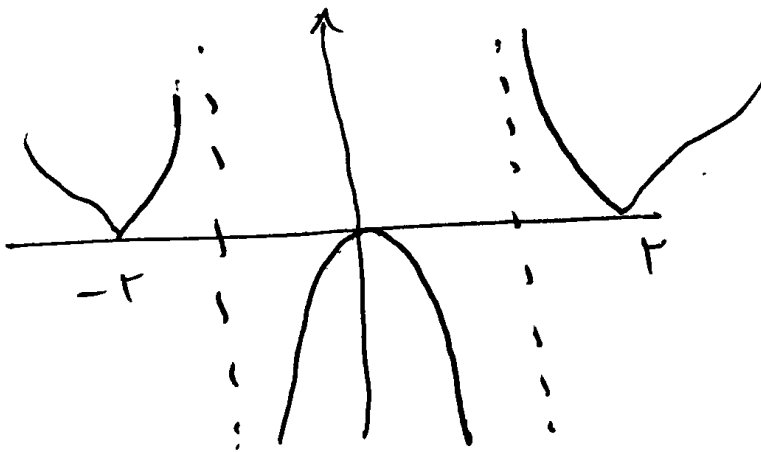
$$\frac{|K|}{2}$$

$$g \circ f = \begin{cases} 0 & x = \pm 1 \\ 1 & -1 < x < 1 \\ -1 & x \in \mathbb{R} - [-1, 1] \end{cases}$$

$x = -1, 1$
ناپوشی

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

$$\frac{|K|}{2}$$



در این صورت

$x = 0$
در اینجا $x = \pm 1$
در مطلق

$$\left(\frac{x^2(x^2 - 1)}{x^2 - 1} \right)' = \left(\frac{x^2 - 1}{x^2 - 1} \right)'$$

$$= \frac{(2x^2 - 1)(x^2 - 1) - 2x(x^2 - 1)}{(x^2 - 1)^2}$$

$$\rightarrow x(x^2 - 2x + 1) = 0 \rightarrow \underline{x = 0}$$

$\Delta < 0$

$$x^k = x \rightarrow x^k - x = 0 \rightarrow \begin{cases} x=0 \\ x=1 \end{cases}$$

$$AA' = (x^r - x)^r + (x - x^r) = r(x^r - x)^{r-1}$$

$$= r(x^r - x + \frac{1}{x} - \frac{1}{x}) = r((x - \frac{1}{x})^r - \frac{1}{x})^{r-1}$$

$$x = \frac{1}{x} \rightarrow AA' = \sqrt{r} \frac{1}{x}$$

$$f(x) = 14x^r + 1$$

$$g\left(\frac{x}{\sqrt{x}}\right) = \frac{1}{\sqrt{\frac{1}{x}}} = \frac{1}{\frac{1}{x}} = x$$

$$(f \circ g \circ h)' = g'(x) \cdot f'(g(x))$$

$$(x^r - 1)^{-1/c} \Rightarrow -\frac{1}{c}(x^r - 1)^{-r/c}$$

$$= -\frac{1}{c} x (r^{-c})^{-r/c} = -\frac{14}{c} x g'\left(\frac{x}{\sqrt{x}}\right)$$

$$f'\left(\frac{x}{\sqrt{x}}\right) = r x \frac{r}{\sqrt{x}} = \frac{94}{\sqrt{x}} \Rightarrow \text{~~0 - 14 \sqrt{x}}~~$$

$$\text{جواب} = -\frac{14}{\sqrt{x}} \times 4x = -14x(-14\sqrt{x})$$

$y = ax^2 + bx + c$ m, k

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$ax^2 + bx + c = 0$

$$P(A) = 0,9$$

$$P(B) = 0,9$$

$$P(A \cap B) = 0,15$$

$$P(A|B) = \frac{P(A \cap B)}{P(B)} = \frac{0,15}{0,9} = \frac{15}{90} = \frac{17}{100}$$

$$\frac{147}{100}$$

$$\frac{148}{100}$$

⊕ Δ همواره

$$-\frac{b}{a} = -\frac{c}{a} + r \frac{x-a}{a}$$

$$b = c - ra \rightarrow b + ra = c$$

a	b	c
1	1	2
1	2	3
1	3	4
1	4	5
1	5	6
1	6	7
1	7	8
1	8	9

a	b	c
2	1	3
2	2	4
2	3	5
2	4	6
2	5	7
2	6	8
2	7	9

⊖ احاطت

$$(n-1)! = (k-1)! = 2! = 2$$

$$7 \times 2! = 14$$

$$\frac{146}{100}$$

سؤال غیر عینی بود

و که می نزدیک ۳ را اعداد نزدیک ۳

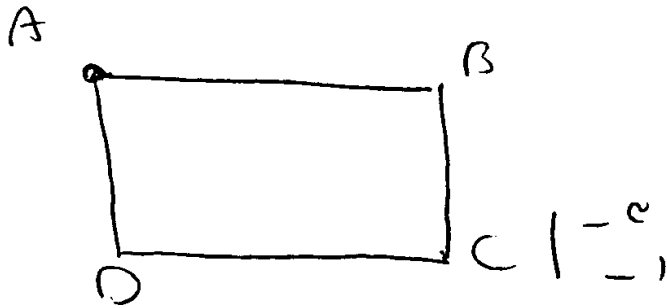
$$\frac{15}{100}$$

ک	یک	دو
2	1	2
2	2	3
2	3	4
2	4	5
2	5	6
2	6	7
2	7	8
2	8	9

$$\Rightarrow \frac{2}{\sqrt{2}}$$

$$\frac{151}{50}$$

$$A \mid r \quad y = r x - r$$

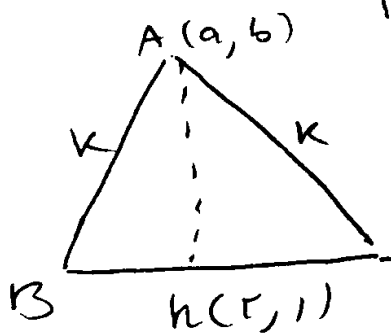


$$BC: y = -\frac{1}{c}x - r \quad \xrightarrow{\text{Slope}} \quad -\frac{1}{c}x - r = r x - r$$

$$BC = \sqrt{b} \quad \Rightarrow \quad B \mid -r$$

$$AB = \sqrt{c}$$

$$r(\sqrt{10} + r\sqrt{10}) \times r = 4\sqrt{10}$$



$$rk = r\sqrt{r_0} \Rightarrow k = \sqrt{c}$$

$$\frac{151}{50}$$

$$y = cx - a$$

$$AH = \frac{\sqrt{c}}{r} k = \frac{\sqrt{r_0}}{r} \Rightarrow (a-r)^2 + (b-1)^2 = \frac{r_0}{r^2}$$

$$r m_{AH} = -\frac{1}{c} \rightarrow \frac{b-1}{a-r} = -\frac{1}{c} \Rightarrow a = \omega - rb$$

$$\rightarrow (b-1)^2 = \frac{r_0}{r^2} \rightarrow (b-1)^2 = \frac{r_0}{c}$$

$$b-1 = \pm \frac{c}{r}$$

$$b = \frac{\omega}{r}$$

$$b = -\frac{1}{r} \rightarrow a = \omega + \frac{c}{r} = \frac{1c}{1r}$$

$$A\left(\frac{1c}{1r}, -\frac{1}{r}\right) \checkmark$$

$$x^r + y^r + rz = k$$

$$x^r + y^r + rz = k$$

تفاضل

$$ry - rz = 0 \implies y = x$$

$$\implies y = x$$

مردق حى

حل -

$$\frac{k}{y} = \frac{y^r}{\omega - x}$$

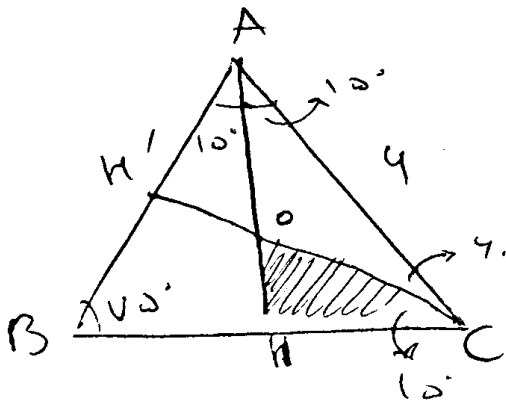
$$\frac{k}{x+y} = \frac{x+1}{y+x+1}$$

$$\longrightarrow \frac{k}{y} = \frac{x+1}{y}$$

$$\implies x = k$$

$$\frac{k}{x} = \frac{y^r}{r} \implies y^r = 1 \longrightarrow y = r$$

$$r - y = -k$$



$$\sin 10^\circ = \frac{HC}{y} \implies HC = y \sin 10^\circ$$

$$\frac{OH}{HC} = \tan 10^\circ \implies OH = HC \cdot \tan 10^\circ$$

$$S_{OHC} = \frac{1}{2} \times (y \sin 10^\circ) \times \tan 10^\circ = \frac{1}{2} y^2 \sin 10^\circ \times \tan 10^\circ$$

$$\sin 10^\circ = \frac{1 - \cos 20^\circ}{2} = \frac{r - \sqrt{e}}{2} = \frac{1}{2(r + \sqrt{e})}$$

$$\tan 10^\circ = \sqrt{\frac{1 - \cos 20^\circ}{1 + \cos 20^\circ}} = \sqrt{\frac{r - \sqrt{e}}{r + \sqrt{e}} \times \frac{r + \sqrt{e}}{r + \sqrt{e}}} = \frac{1}{r + \sqrt{e}}$$

$$S_{OHC} = \frac{1}{2} \times \frac{1}{2(r + \sqrt{e})^2} = \frac{1}{4(r + \sqrt{e})^2}$$

درگزینہ ہاؤس کے حاملہ مسابقت نرینہ ۱۴ انتہا بہتر دم

گھنڈس محمد محمدی

دانشجوی ریاضی ترائس بیوانفورماتیک

عضو ایکن ریاضی بیوانفورماتیک ایران

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۱۴۰۰ تیرماہ

