

کتاب: تجریدی اریتمت ماه ۱۴۰۲

(۱۱۱)  $m=0$  (۴)  $\frac{1}{\Delta}$

$$-m^2 + m^2 + 1 = -m - n$$

$$m^2 - m^2 - 1 - n - m = 0$$

$$m^2 + 2(-m-1) - 1 - m = 0$$

$$\Delta < 0 \Rightarrow (-m-1)^2 - 4(m)(-1-m) < 0$$

$$m^2 + 2m + 1 + 4m + 4 < 0$$

$$\Delta m^2 + 6m + 5 < 0 \Rightarrow m = \frac{-3 \pm \sqrt{9-5}}{2}$$

$$m = \frac{-3 \pm 2}{2} \quad \left\{ \begin{array}{l} m = -1 \\ m = -\frac{1}{2} \end{array} \right.$$

$m$	$-1$	$-\frac{1}{2}$	$+\infty$
$\Delta m^2 + 6m + 5$	$+$	$-$	$+$

$$\boxed{-1 < m < -\frac{1}{2}}$$

$$f(g^{-1}(a)) = -1$$

(۱۱۵)  $a = -\frac{1}{\lambda}$   $\frac{1}{\Delta}$

$$g^{-1}(a) = \frac{1}{\lambda} \Rightarrow g\left(\frac{1}{\lambda}\right) = a$$

$$-\left|\frac{1}{\lambda}\right| \sqrt{\frac{1}{\lambda}} = a \Rightarrow \boxed{a = -\frac{1}{\lambda}}$$

$$\alpha + \beta = \frac{-b}{\Delta \alpha}$$

$$\alpha \cdot \beta = \frac{c}{\Delta \alpha} \Rightarrow \Delta \alpha^2 = 1$$

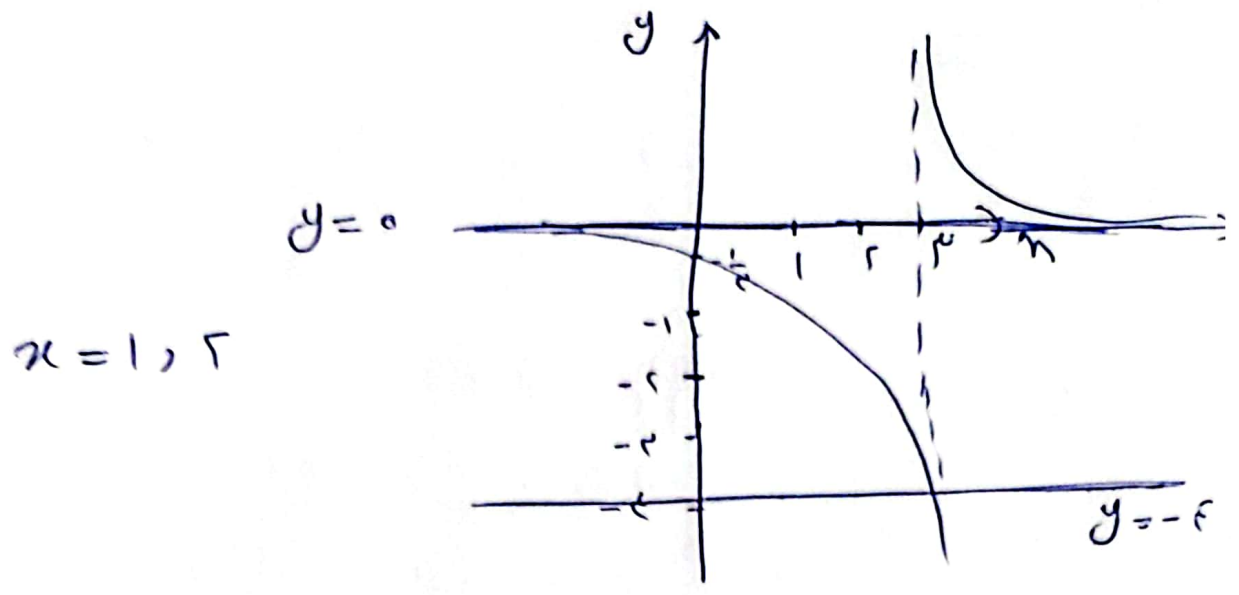
$$\boxed{\alpha = \pm \frac{1}{\Delta}}$$

$$\alpha_2 = \frac{-b}{\Delta \alpha} = \frac{-1}{\Delta \cdot \alpha} = \frac{-1}{\Delta \cdot \left(\pm \frac{1}{\Delta}\right)} = \pm 1$$

$$\alpha < \beta \Rightarrow \begin{cases} \alpha = -\frac{1}{\Delta} \\ \beta = 1 \end{cases}$$

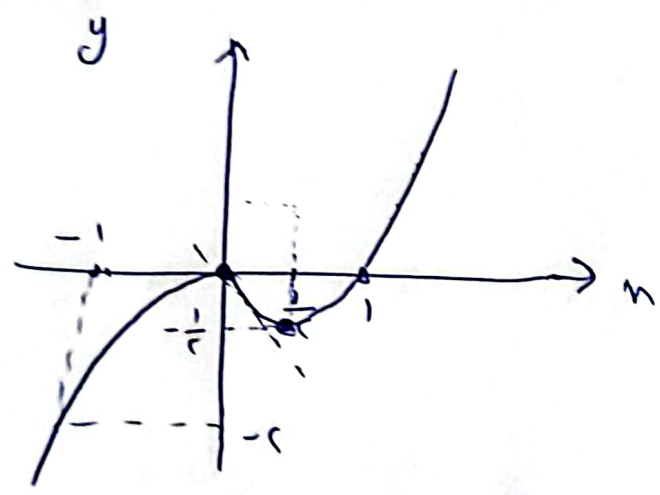


(۱۱۵)  $\frac{1}{\Delta}$



$x = 1, 2$

$$y = (x-1)|x| = \begin{cases} x^2 - x & x \geq 0 \\ -x^2 + x & x < 0 \end{cases}$$



جزئیہ (۲)  $(\frac{1}{2}, \frac{1}{4})$

$$a + b = \frac{1}{2}$$

$$f(1) = 0 \Rightarrow 1 + cx^{a+b} = 0$$

$$cx^{a+b} = -1$$

$$f(\frac{1}{2}) = \frac{1}{2} \Rightarrow 1 + c(\frac{1}{2})^{a+b} = \frac{1}{2}$$

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

$$\frac{cx^{a+b}}{cx^a} = \frac{1}{2} \Rightarrow x^b = \frac{1}{2}$$

$$\boxed{b=1}$$

$$\begin{cases} b=1 \\ c=-1 \\ a=-1 \end{cases}$$

۱۱۶ - جزئیہ (۲)  $(\frac{1}{9})$



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

$$f(-1) = 1 - 2^{-1-1} = 1 - 2^{-2} = 1 - \frac{1}{4} = \frac{3}{4}$$

$$y = \frac{x+5}{6} - \frac{\sqrt{x+1}}{6}$$

5) سب سے پہلے - 117

$$y(5) = \frac{5}{6} - 1 = \frac{1}{6}$$

$$\boxed{a=5}$$

$$y = an + a\sqrt{n} \Rightarrow y\left(\frac{1}{6}\right) = 5$$

$$\frac{a}{6} + \frac{a}{6} = 5 \Rightarrow \frac{2a}{6} = 5 \Rightarrow \boxed{a=15}$$

$$\tan\left(\frac{\pi}{4} - \alpha\right) = \cot \alpha$$

4) سب سے پہلے - 118

$$\cot(180^\circ - \alpha) = \frac{2}{\frac{5}{6}} = \frac{6}{5}$$

$$\boxed{-\frac{6}{5}}$$

$$\cot \alpha = -\cot(180^\circ - \alpha) = -\frac{6}{5}$$

$$\frac{2 \cos(75^\circ) - 2 \sin(15^\circ)}{\sin(75^\circ) - \cos(15^\circ)}$$

4) سب سے پہلے - 119

$$\frac{2 \cos(75^\circ) - 2 \sin(15^\circ)}{\sin(75^\circ) - \cos(15^\circ)}$$

$$\sin(75^\circ) - \cos(15^\circ)$$

$$\frac{-2 \sin 75^\circ - 2 \sin 15^\circ}{-\sin 75^\circ - \sin 15^\circ} = \frac{-2 \sin 90^\circ}{-2 \sin 90^\circ} = 1$$

$$\sin \pi x - \sin \pi m \sin \pi a_m = 0$$

۱۲۰ - گزینه ۲

$$\sin \pi m (1 - \sin \pi a_m) = 0$$

ب - ج - د

$$\begin{aligned} \sin \pi m = 0 &\Rightarrow \pi m = 0 \Rightarrow m = 0 \\ &\pi m = \pi \Rightarrow m = \frac{\pi}{\pi} \\ &\pi m = -\pi \Rightarrow m = -\frac{\pi}{\pi} \end{aligned}$$

$$\begin{aligned} \sin \pi a_m = \frac{1}{c} &\Rightarrow \pi a_m = \frac{\pi}{c} \Rightarrow a_m = \frac{1}{c} \\ &\pi a_m = \frac{3\pi}{4} \Rightarrow a_m = \frac{3}{4c} \\ &\pi a_m = \frac{5\pi}{4} \Rightarrow a_m = \frac{5}{4c} \end{aligned}$$

$$\frac{2\pi}{a} = \frac{4\pi}{c} - \frac{2\pi}{c}$$

$$\frac{2\pi}{a} = \frac{2\pi}{c} \Rightarrow a = c$$

۱۲۱ - گزینه ۱

$$T = 4\pi$$

$$T = \frac{2\pi}{\frac{1}{a}} = \frac{2\pi}{\frac{1}{c}} = 4\pi$$

$$\lim_{x \rightarrow \frac{1}{c}^+} \frac{a - c}{0^-} = -\infty \Rightarrow a = c$$

۱۲۲ -

$$\lim_{x \rightarrow \frac{1}{c}} \left[ \frac{1}{\frac{c}{2}} - \frac{1}{c} \right] = \lim_{x \rightarrow \frac{1}{c}} \left[ \frac{1}{\frac{c}{2}} - \frac{1}{c} \right] = -1$$

گزینه ۴

$$\boxed{-1}$$

(۴)



$$\lim_{x \rightarrow 1^+} (f+g)(x) = 2 \quad \lim_{x \rightarrow 1^-} (f+g)(x) = 2 \quad \text{پس } -125$$

$$\left. \begin{array}{l} f(1^+) = \frac{\Delta}{c} \\ f(1^-) = \frac{\Delta}{c} \end{array} \right\} \begin{array}{l} \Leftarrow f(1^+) + g(1^+) = 2 \quad , \quad f(1^+) - g(1^+) = \Delta \\ \Leftarrow f(1^-) + g(1^-) = 2 \quad , \quad f(1^-) - g(1^-) = \Delta \end{array}$$

$$\lim_{x \rightarrow 1} f(x) = \frac{\Delta}{c}$$

$$\frac{a}{f(b)} = \frac{a}{-2a} = -\frac{1}{2}$$

$$f(x) = -2a \quad -125$$

$$b = 0 \quad \text{پس } -125$$

$$\frac{an-1}{c^{n+1}} = \frac{\Delta+n}{v}$$

$$\text{پس } -125$$

$$a = 4$$

$$van - v = 1\Delta n + \Delta + c^{n^2} + n$$

$$c^{n^2} + 14n - van + 1c = 0$$

$$c^{n^2} + n(14 - va) + 1c = 0$$

$$\Delta = 0 \Rightarrow (14 - va)^2 - 4(c)(1c) = 0$$

$$\left\{ \begin{array}{l} 14 - va = 15 \Rightarrow a = \frac{1}{v} \\ 14 - va = -15 \Rightarrow a = 4 \Rightarrow c^{n^2} - 15n + 1c = 0 \end{array} \right.$$

$$n^2 - 15n + 1 = 0$$

Δ

$$(n-5)^2 = 0 \Rightarrow n = 5$$

ریشه مضاعف

$$-11 = \frac{f(\cdot) - f(-1)}{0 - (-1)}$$

سینه - ۱۳۶

$\Lambda$

$$-11 = 1 - \Lambda(-a+1)$$

$$\Lambda(1-a) = 12 \Rightarrow \Lambda - \Lambda a = 12$$

$$\Lambda a = -4 \Rightarrow \boxed{a = -\frac{1}{\Lambda}}$$

$$f'(x) = \psi(\tau)(\tau^{\epsilon+1})^{\tau}(a\tau+1) + (\tau^{\epsilon+1})^{\tau}(a)$$

$$\begin{aligned} f'(x=1) &= \psi(\tau)(\tau)(-\frac{1}{\tau}+1) + (\tau)(-\frac{1}{\tau}) \\ &= 12 - 4 = 8 \end{aligned}$$

$$y' = \epsilon \tau^{\epsilon} - 12 = 0$$

سینه - ۱۳۷

$$\tau = \pm \epsilon$$

x	$-\infty$	$-\epsilon$	$\epsilon$	$\infty$
$y'$	+	+	-	+
	↗	↓	↘	↗
			Min	

$$y(\tau) = \tau^{\epsilon} - 12(\tau) + \tau$$

$$= 8 - 2\epsilon + \epsilon = \boxed{-1\epsilon}$$

$$S = \tau(x)(\sqrt{\epsilon-x}) \Rightarrow \boxed{S(\epsilon) = 4}$$

$$S' = \tau \sqrt{\epsilon-x} + \tau x \frac{-1}{\sqrt{\epsilon-x}} = 0$$

سینه - ۱۳۸

$$4(\epsilon-x) - \tau x = 0$$

$$4\epsilon = \Lambda x \Rightarrow \boxed{x = \epsilon}$$

(4)



۴) - 159

۱, ۴, ۹, □, □, ○, □, □, ۲۹, ۴۴, (۲۹, ۴)

$$\bar{x} = \frac{۴۴ + ۲۹}{۲} = \Delta / \Delta$$

$$\bar{x} = \frac{۲۹ + ۴۴}{\Delta} = ۲۹ \Rightarrow \Delta = ۲۲$$

۲) - 120

□ □ □  
۱ , 5

□ □ □  
۳ ۲ ۱

$$۴! \times ۲! = 144$$

(۱, ۲), (۲, ۲), (۲, ۴)

(۴, ۵), (۵, ۶)

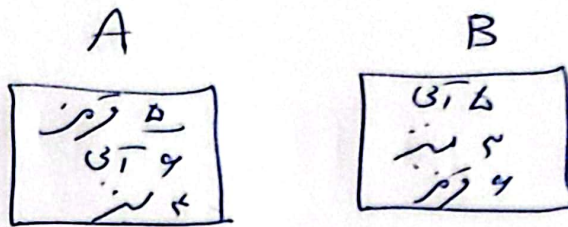
(۲, ۱), (۲, ۲), (۴, ۲), (۵, ۴), (۶, ۵)

(۱, ۱), (۲, ۲), (۲, ۲), (۴, ۴), (۵, ۵), (۶, ۶)

$$\frac{۲۴ - ۱۶}{۲۴} = \frac{\Delta}{9}$$

(V)

(۱۴۵) گزینہ ۱)

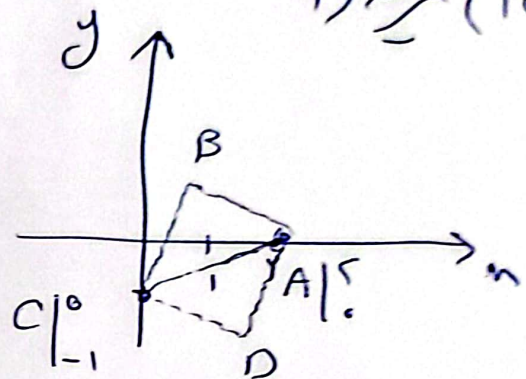


$$\frac{9}{1\Delta} \times \frac{\Delta}{1\Delta} + \frac{4}{1\Delta} \times \frac{4}{1\Delta} = \frac{9}{1\Delta} = \cdot/۲۶$$

(۱۴۶) گزینہ ۲)

درازا :  $y+1 = \frac{1}{c}x$   
AC

$$y = \frac{1}{c}x - 1$$



مساویات :  $M \begin{vmatrix} \frac{y+1}{c} \\ \frac{0+(-1)}{c} \end{vmatrix} \Rightarrow M \begin{vmatrix} 1 \\ -\frac{1}{c} \end{vmatrix}$

درازا :  $y + \frac{1}{c} = -2(x-1)$

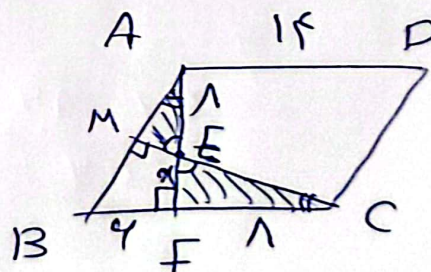
BC)

$$y = -2x + \frac{2}{c} \Rightarrow \begin{matrix} \text{نقطہ } (0, \frac{2}{c}) \\ \text{نقطہ } (\frac{2}{c}, 0 - \frac{2}{c}) \end{matrix}$$

$AE = 1$   
 $BF = 4$

$$\frac{EF}{4} = \frac{1}{1+x}$$

$\triangle EFC \sim \triangle ABE$



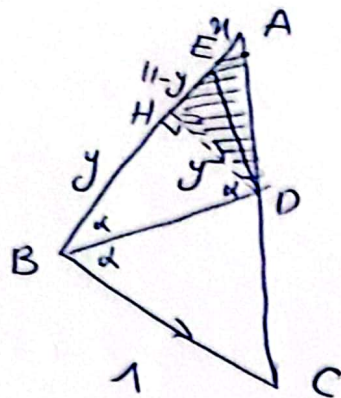
(۱۴۶) گزینہ ۲)

$$1x + x^c = 1 \Rightarrow x = 4$$

(۱)

$$AF = 1 + 1 = 2$$





$$DH^2 = BH \times HE$$

- 128  
1) سینه

$$y^2 = y(11-y)$$

$$y = 11 - y \Rightarrow y = \Delta/\Delta$$

$$\triangle AHD \sim \triangle ABC \Rightarrow \frac{\overbrace{AH}^{x+11-y}}{AB} = \frac{\overbrace{HD}^y}{\overbrace{BC}^{\wedge}}$$

$$\frac{x + \Delta/\Delta}{x + 11} = \frac{\Delta/\Delta}{\wedge} \Rightarrow x = 4/4$$

$$\angle B + 1 = \frac{\frac{4}{\sqrt{2}} + \epsilon\sqrt{1\epsilon}}{\frac{\wedge}{\sqrt{2}} + \sqrt{1\epsilon}} + 1$$

2) سینه - 129

( $\sqrt{v}$ )

$$= \frac{\epsilon\sqrt{2} + \epsilon\sqrt{1\epsilon}}{\epsilon\sqrt{2} + \sqrt{1\epsilon}} + \frac{\epsilon\sqrt{2} + \sqrt{1\epsilon}}{\epsilon\sqrt{2} + \sqrt{1\epsilon}}$$

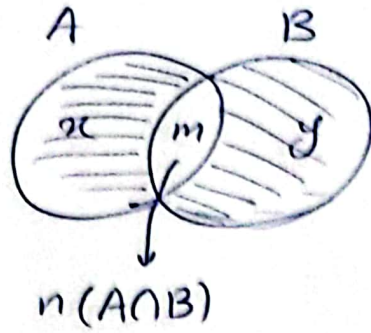
$$= \frac{v\sqrt{2} + \epsilon\sqrt{1\epsilon}}{\epsilon\sqrt{2} + \sqrt{1\epsilon}} = \frac{v\sqrt{2} + \epsilon\sqrt{2} \times \sqrt{v}}{\epsilon\sqrt{2} + \sqrt{2} \times \sqrt{v}}$$

$$= \frac{\frac{v}{\sqrt{v}} \sqrt{2} + \epsilon\sqrt{2}}{\frac{\epsilon\sqrt{2}}{\sqrt{v}} + \sqrt{2}} = \frac{\sqrt{1\epsilon} + \epsilon\sqrt{2}}{\sqrt{2}(1 + \frac{\epsilon}{\sqrt{v}})} = \frac{\sqrt{v} + \epsilon}{1 + \frac{\epsilon}{\sqrt{v}}}$$

(9)

$$= \frac{v + \epsilon\sqrt{v}}{\sqrt{v}} \times \frac{\epsilon - \sqrt{v}}{\epsilon - \sqrt{v}} = \frac{v\epsilon - v\sqrt{v} + \epsilon\sqrt{v} - \epsilon\sqrt{v}}{11} = \frac{11\sqrt{v}}{11}$$

۲)  $\frac{1}{2} - 1 \text{ CV}$



$$x + y + m = \Delta V$$

$$m = \frac{1}{2}x = \frac{1}{2}y$$

$$n(A) = x + m$$

$$n(B) = y + m$$

$$x + \frac{1}{2}x + \frac{1}{2}x = \Delta V$$

$$\frac{3}{2}m + \frac{3}{2}m + 1 \cdot m = 2 \text{ CV}$$

$$19m = 2 \text{ CV}$$

$$n(A) = x + m = 1 \text{ CV} + \frac{1}{2} \text{ CV} = \frac{3}{2} \text{ CV}$$

$$x = 1 \text{ CV} \Rightarrow m = \frac{1}{2} \text{ CV}$$

۱)  $\frac{1}{2} - 1 \text{ CV}$

$$a_n = a + (n-1)d$$

$$a, a+d \Rightarrow a_n = a + (n-1)d$$

$$a + \epsilon, a+d + \epsilon \Rightarrow a'_n = (a + \epsilon) + (n-1)d$$

$$a'_n - a_n = \epsilon$$

مجموعه اول:  $1, 2, 3, \dots, n$   
 مجموعه دوم:  $1, 2, 3, \dots, n$   
 مجموع:  $1+2+3+\dots+n$

۲)  $\frac{1}{2} - 1 \text{ CV}$

$$f(1) = 2 + 5a$$

$$f(1) = a + \Delta$$

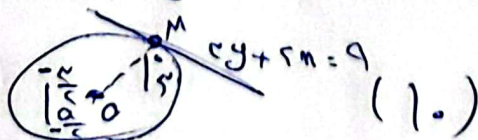
$$\Rightarrow 2 + 5a = a + \Delta$$

$$a = + \frac{1}{4} \Delta$$

$$f(+\epsilon) = (+\epsilon)(+\epsilon)^5 + \Delta = +\epsilon^6 + \Delta = \epsilon^2$$

$$x^c + y^c + cm + ay = c \Rightarrow (x + \frac{c}{2})^c + (y + \frac{c}{2})^c - \frac{c}{2} - \frac{c}{2} = c - 1 \text{ CV}$$

در  $\Delta V$   
 0



$$m_{OM} = \frac{\frac{c}{2} + \frac{c}{2}}{+\frac{c}{2}} = \frac{c}{c} = 1$$

$$\frac{c}{2} + \frac{c}{2} = +\frac{c}{2} \Rightarrow a = -1/\Delta$$