

نام و نام خانوادگی الذی محمد پاسخنامه تشریحی تکلیف شماره کلاس دوره اول دم

$$y_1^3 = 2n_1^3 - 1 \quad \text{if } 2n_1^3 = 2n_r^3 \quad \xrightarrow{n_1 = n_r} \quad y_1^3 = y_r^3 \rightarrow y_1 = y_r \rightarrow \text{تابع است}$$

$$y_r^3 = 2n_r^3 - 1$$

$$y_1^3 + y_1 = 2n_1^3 - 1 \quad n_1 = n_r \quad y_1^3 + y_1 = y_r^3 + y_r \rightarrow y_1^3 + y_1 - y_r^3 - y_r = 0$$

$$y_r^3 + y_r = 2n_r^3 - 1$$

$$(y_1 - y_r)(y_1^2 + y_1 y_r + y_r^2) + (y_1 - y_r)(y_1 + y_r + 1) = 0 \rightarrow y_1 - y_r = 0 \rightarrow y_1 = y_r$$

$$\rightarrow y_1^2 + y_1 y_r + y_r^2 + 1 = 0 \rightarrow y_1 = \frac{-y_r \pm \sqrt{\Delta}}{2}$$

الف) $y_1 = n_1^3 - 1 \xrightarrow{n_1 = n_r} y_1 = y_r \quad \checkmark$
 $y_r = n_r^3 - 1$

ب) $n = 0 \rightarrow |y| = 1 \rightarrow y = \pm 1 \quad \checkmark$

ج) $n = 0 \rightarrow y^3 = -1 \rightarrow y = -1 \quad \checkmark$

د) $n = 0 \rightarrow \sqrt[3]{y} = 2 \rightarrow y = 8 \quad \checkmark$

الف) $\tan\left(\frac{\pi}{4}\right) \rightarrow \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$

ب) $\cot\left(\frac{\sqrt{3}\pi}{4}\right) \rightarrow \frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = -\sqrt{3}$

ج) $\tan^2 \pi \rightarrow \frac{-\frac{1}{\sqrt{3}}}{\frac{\sqrt{3}}{2}} = -\frac{2}{3}$

د) $\cot 110^\circ \rightarrow \frac{-1}{0}$
 تعریف نشده

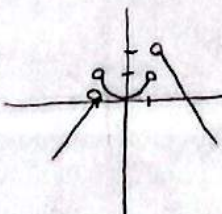
الف) $30^\circ, 150^\circ \rightarrow \sin \alpha = \frac{1}{2}$

ب) $45^\circ, 135^\circ \rightarrow \cos \alpha = \frac{\sqrt{2}}{2}$

$-2n+4 \quad n > 1 \quad n^2 \quad -1 < n < 1$

$n=1 \quad n=2$
 $y=2 \quad y=0$

$n+1 \quad n < -1$



$$-n+3 \quad n > 1$$

$$n=1 \rightarrow y=2$$

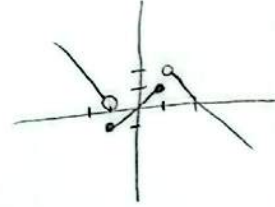
$$n=2 \rightarrow y=1$$

$$n^w \quad -1 \leq n \leq 1$$

$$n=-1 \rightarrow y=-1 \quad n=1 \rightarrow y=1$$

$$-n-1 \quad n < -1$$

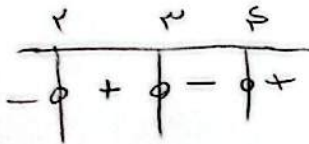
$$n=-1 \rightarrow y=0$$



6

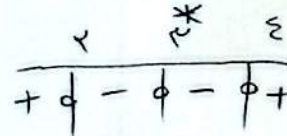
$$الف) (n-2)(n-3)(n-5)$$

$$n=2 \quad n=3 \quad n=5$$



$$ب) (n-2)(n-3)^2(n-5)$$

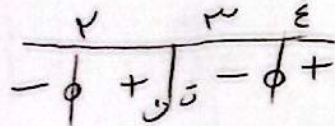
$$n=2 \quad n=3 \quad n=5$$



7

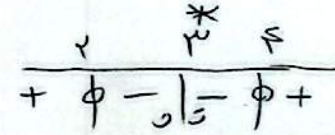
$$الف) (n-2)(n-5) \rightarrow n=2 \quad n=5$$

$$n=3 \leftarrow n-2$$



$$ب) (n-2)(n-5) \rightarrow n=2 \quad n=5$$

$$(n-3)^2 \rightarrow n=3 \quad n=3$$

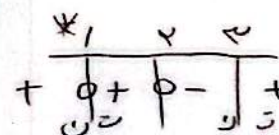
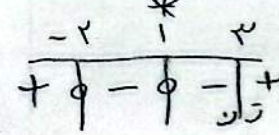


8

$$فرض $n-1 = 0 \Rightarrow n=1$
 $n^2 + n - 2 = 0 \Rightarrow (n+2)(n-1) = 0$
 $n = -2 \quad n = 1$
 $n-2 \rightarrow n=2$$$

$$ب) n^2 - 2n + 2 \rightarrow n=2 \quad n=1$$

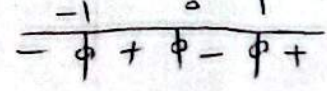
$$n^2 - 2n + 3 \rightarrow n=1 \quad n=3$$



9

$$الف) n^2 - n^2 \rightarrow n(n^2 - 1) = 0 \rightarrow n^2 - 1 = 0 \Rightarrow n = \pm 1$$

$$-1 \pm \sqrt{1-1} \rightarrow \Delta < 0 \Rightarrow \text{لا يوجد حلا حقيقي}$$



$$ب) n^2 + 2n + 3 \rightarrow \frac{-2 \pm \sqrt{4-12}}{2} \rightarrow \Delta < 0 \Rightarrow \text{لا يوجد حلا حقيقي}$$

$$-2 \pm \sqrt{4-12} \rightarrow \Delta < 0 \rightarrow \text{لا يوجد حلا حقيقي}$$

10