

۱۸.۵

$$\Rightarrow \begin{cases} \textcircled{1} = 0 \Rightarrow y_1 = y_2 \\ \Delta \textcircled{0} = y_1^2 - 2y_1^2 - 2 = -y_1^2 - 2 < 0 \Rightarrow \textcircled{1} \neq 0 \end{cases} \rightarrow \text{ریشه ندارد}$$

نام و نام خانوادگی: امیرحسین... پاسخنامه تشریحی تکلیف شماره ۲ کلاس ... همچین B

$$\text{الف) } y^3 = 2x^2 - 1 \Rightarrow \begin{cases} y_1^3 = 2x_1^2 - 1 \\ y_2^3 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 = y_2^3 \Rightarrow y_1 = y_2$$

تابع است

۲
۱

درستی

$$\text{ب) } y^3 + y = 2x^2 - 1 \Rightarrow \begin{cases} y_1^3 + y_1 = 2x_1^2 - 1 \\ y_2^3 + y_2 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 + y_1 = y_2^3 + y_2 \Rightarrow y_1^3 - y_2^3 + y_1 - y_2 = 0 \Rightarrow (y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2 + 1) = 0$$

تابع است

$$\text{الف) } y = x^2 - 1 \quad y = x^2 + 1 - xy \xrightarrow{x=0} y = 1 \Rightarrow y = \pm 1$$

تابع است

۲
۲

$$\text{ب) } y^3 + x^2 = 2x - 1 \Rightarrow \begin{cases} y_1^3 = -x_1^2 + 2x_1 - 1 \\ y_2^3 = -x_2^2 + 2x_2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 = y_2^3 \Rightarrow y_1 = y_2$$

تابع است

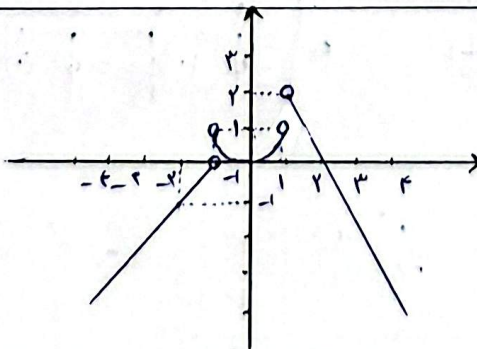
$$\begin{aligned} \text{الف) } \tan \frac{\pi}{4} &= \frac{\pi}{4} = 45^\circ \Rightarrow \frac{\sin 45^\circ}{\cos 45^\circ} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1 \checkmark \\ \text{ب) } \cot \frac{7\pi}{4} &= \frac{7\pi}{4} = 315^\circ \Rightarrow \frac{\cos 315^\circ}{\sin 315^\circ} = \frac{\frac{\sqrt{2}}{2}}{-\frac{\sqrt{2}}{2}} = -1 \checkmark \\ \text{ج) } \tan 330^\circ &= \frac{\sin 330^\circ}{\cos 330^\circ} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}} \checkmark \\ \text{د) } \cot 18^\circ &= \frac{\cos 18^\circ}{\sin 18^\circ} = \frac{1}{\sin 18^\circ} \Rightarrow \text{تقریباً ۳} \checkmark \end{aligned}$$

۲
۳

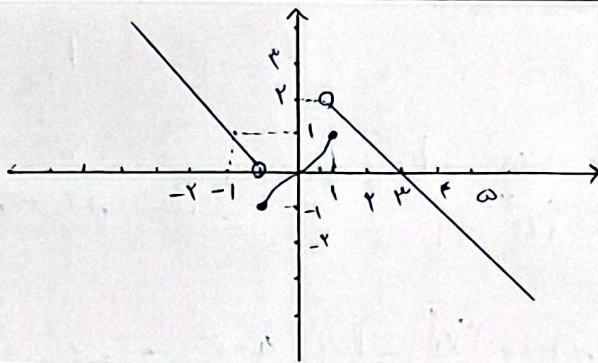
$$\text{الف) } \sin a = \frac{1}{\sqrt{2}} \Rightarrow a = \left\{ \frac{\pi}{4}, \frac{3\pi}{4} \right\} \checkmark$$

۲
۴

$$\text{ب) } \cos a = \frac{\sqrt{2}}{2} \Rightarrow a = \left\{ \frac{\pi}{4}, \frac{7\pi}{4} \right\} \checkmark$$

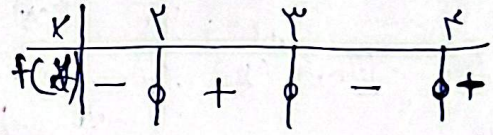


۲
۵



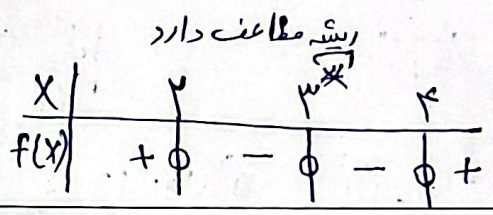
۲
۶

الف) $y = (x-2)(x-3)(x-4)$
 $x=2 \quad x=3 \quad x=4$

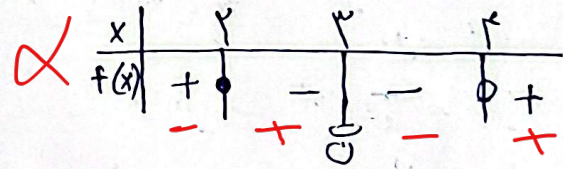


۲
۷

الف) $y = (x-2)(x-3)^2(x-4)$
 $x=2 \quad x=3 \quad x=4$

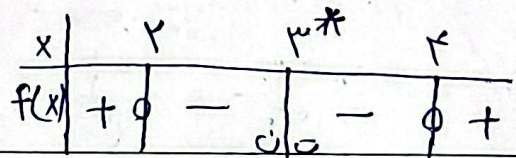


الف) $y = \frac{(x-2)(x-4)}{x-3}$

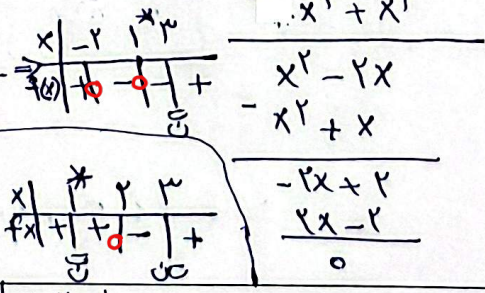


۱
۸

الف) $y = \frac{(x-2)(x-4)}{(x-3)^2}$

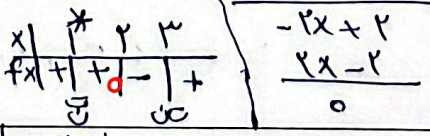


الف) $y = \frac{x^3 - 3x + 2}{x-3}$ مصدوع ضرایب صفراست $\Rightarrow \frac{x^3 - 3x + 2}{x-3} = \frac{(x-1)(x^2 + x - 2)}{x-3} = \frac{(x-1)(x-1)(x+2)}{x-3}$
 $x=1 \quad x=1 \quad x=3$

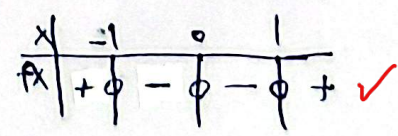


۱۱۵
۹

ب) $y = \frac{x^2 - 3x + 2}{x^2 - 3x + 3} = \frac{(x-2)(x-1)}{(x-3)(x-1)}$



الف) $y = \frac{x^2 - x^2}{x^2 + x + 2} = \frac{x^2(x-1)(x+1)}{x^2 + x + 2}$
 $\Delta < 0 \Rightarrow$ همیشه مثبت



۲
۱۰

ب) $y = \frac{x^2 + 3x + 2}{x^2 + 2x + 3}$
 $\Delta < 0$

