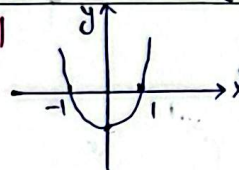


$$\Rightarrow \begin{cases} \textcircled{1} = 0 \Rightarrow y_1 = y_2 \\ \Delta \textcircled{0} = y_1^2 - 2y_1^2 - 2 = -y_1^2 - 2 < 0 \Rightarrow \textcircled{1} \neq 0 \end{cases} \rightarrow \text{ریشه ندارد}$$

نام و نام خانوادگی: امیر حسین حسینی پاسخنامه تشریحی تکلیف شماره ۴ کلاس: دوم دبیرستان B

الف)  $y^3 = 2x^2 - 1 \Rightarrow y_1^3 = 2x_1^2 - 1$   
 $y_2^3 = 2x_2^2 - 1$  تابع است }  $x_1 = x_2 \Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$

ب)  $y^3 + y = 2x^2 - 1 \Rightarrow y_1^3 + y_1 = 2x_1^2 - 1$   
 $y_2^3 + y_2 = 2x_2^2 - 1$  تابع است }  $x_1 = x_2 \Rightarrow y_1^3 + y_1 = y_2^3 + y_2 \Rightarrow y_1^3 - y_2^3 + y_1 - y_2 = 0 \Rightarrow (y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2 + 1) = 0 \Rightarrow (y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2 + 1) = 0$

الف)  $y = x^2 - 1$  تابع است   $|y| + xy = x^2 + 1$   
 $|y| = x^2 + 1 - xy \xrightarrow{x=0} |y| = 0 + 1 - 0 \Rightarrow |y| = 1 \Rightarrow y = \pm 1$

ج)  $y^3 + x^2 = 2x - 1 \Rightarrow y_1^3 = -x_1^2 + 2x_1 - 1$   
 $y_2^3 = -x_2^2 + 2x_2 - 1$  تابع است }  $x_1 = x_2 \Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$   
 $\sqrt[3]{y} + \sqrt{x} = 2 \Rightarrow \sqrt[3]{y} = 2 - \sqrt{x} \Rightarrow \sqrt[3]{y} = 2 - \sqrt{x+2} \Rightarrow y = (2 - \sqrt{x+2})^3$

الف)  $\tan \frac{\pi}{4} = \frac{\pi}{4} = 45^\circ \Rightarrow \frac{\sin 45^\circ}{\cos 45^\circ} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$

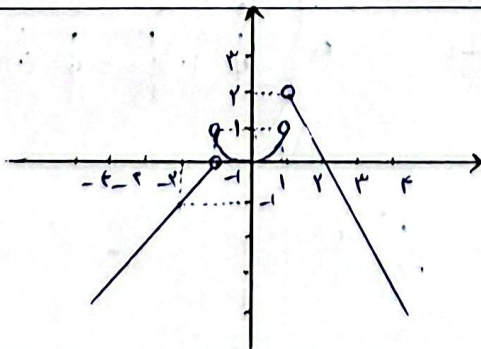
ب)  $\cot \frac{7\pi}{4} = \frac{7\pi}{4} = 315^\circ \Rightarrow \frac{\cos 315^\circ}{\sin 315^\circ} = \frac{\frac{\sqrt{2}}{2}}{-\frac{\sqrt{2}}{2}} = -1$

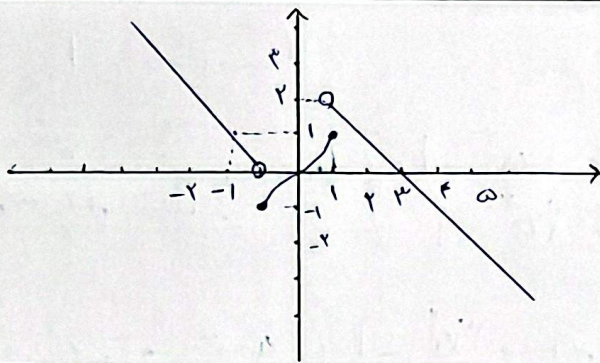
ج)  $\tan 330^\circ = \frac{\sin 330^\circ}{\cos 330^\circ} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}}$

>  $\cot 18^\circ = \frac{\cos 18^\circ}{\sin 18^\circ} = \frac{1}{\sin 18^\circ} \Rightarrow$  صرف نیست

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

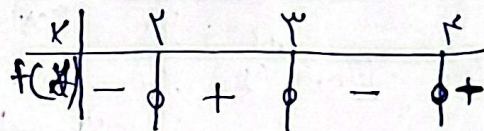
ب)  $\cos a = \frac{\sqrt{2}}{2} \Rightarrow a = \left\{ \frac{\pi}{4}, \frac{7\pi}{4} \right\}$





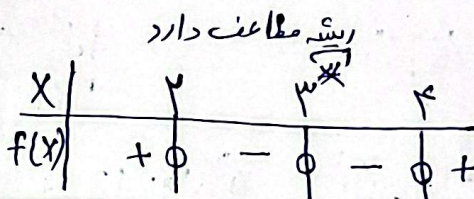
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الف)  $y = (x-2)(x-3)(x-4)$   
 $x=2 \quad x=3 \quad x=4$

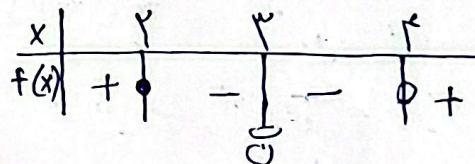


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ب)  $y = (x-2)(x-3)^2(x-4)$   
 $x=2 \quad x=3 \quad x=4$

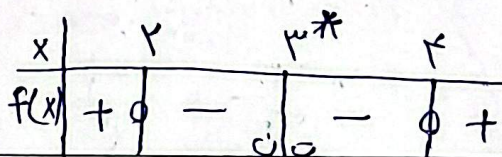


الف)  $y = \frac{(x-2)(x-4)}{x-3}$

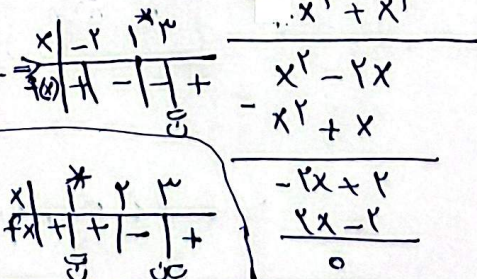


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ب)  $y = \frac{(x-2)(x-4)}{(x-3)^2}$

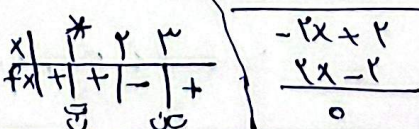


الف)  $y = \frac{x^3 - 3x + 2}{x-3}$  مخرج ضرایب منفی است  $\Rightarrow \frac{x^3 - 3x + 2}{x-3} \Rightarrow \frac{x^3 - 3x + 2}{x^2 + x - 2} \cdot \frac{x-1}{x-1}$   
 $\frac{(x-1)(x^2 + x - 2)}{(x-3)} = \frac{(x-1)(x-1)(x+2)}{x-3}$   $x=3$

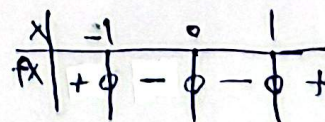


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ب)  $y = \frac{x^2 - 3x + 2}{x^2 - 3x + 3} = \frac{(x-2)(x-1)}{(x-3)(x-1)}$   $x=1$



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



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

