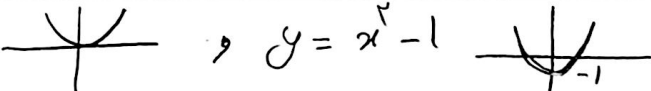


نام و نام خانوادگی شماره کلاس **A**

الف) $y_1^3 = 2x_1^2 - 1$ و $y_2^3 = 2x_2^2 - 1 \xrightarrow{x_1=x_2} y_1^3 = y_2^3 \Rightarrow y_1 = y_2 \checkmark$

ب) $y_1^3 + y_1 = 3x_1^2 - 1$ و $y_2^3 + y_2 = 3x_2^2 - 1 \xrightarrow{x_1=x_2} y_1^3 + y_1 = y_2^3 + y_2 \checkmark$
 هم‌نام تابع است

الف) $y = x^2$ و $y = x^2 - 1$  $\checkmark$

ب) $|y| + xy = x^2 + 1 \xrightarrow{x=0} |y| = 1 \Rightarrow y = 1, -1 \checkmark$

ج) $y_1^3 + x_1^3 = 2x_1 - 1$ و $y_2^3 + x_2^3 = 2x_2 - 1 \xrightarrow{x_1=x_2} y_1^3 = y_2^3 \Rightarrow y_1 = y_2 \checkmark$

د) $\sqrt[3]{y} + \sqrt[3]{x} = 2 \xrightarrow{x=y} \sqrt[3]{y} + \sqrt[3]{y} = 2 \Rightarrow y = y \checkmark$

الف) $\tan \frac{\pi}{4} = \tan 45^\circ = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$

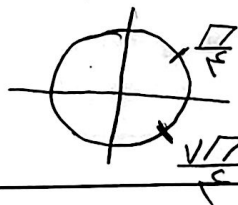
ب) $\cot \frac{\sqrt{17}}{9} = \cot 10^\circ = \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$

ج) $\tan 30^\circ = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

د) $\cot 110^\circ = \frac{\cos}{\sin} = \frac{-\sin}{\cos} = -\tan \Rightarrow$ وجود ندارد

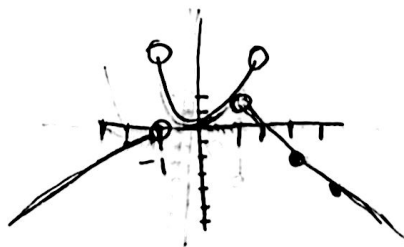
الف) $\sin \alpha = \frac{1}{2} \Rightarrow$  $D_f = \{\frac{\pi}{6}, \frac{5\pi}{6}\}$

ب) $\cos \alpha = \frac{\sqrt{2}}{2}$

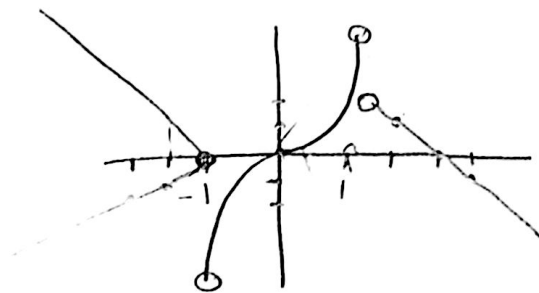


$D_f = \{\frac{\pi}{4}, \frac{7\pi}{4}\}$

$f(x) = \begin{cases} -2x+4, & x > 1 \\ x^2, & -1 < x < 1 \\ x+1, & x < -1 \end{cases}$



$$\begin{cases} -x+3, & x > 1 \\ x^2, & -1 < x < 1 \\ -x-1, & x < -1 \end{cases}$$



الف) $(x-2)(x-3)(x-4) =$

ب) $(x-2)(x-3^*)(x-4) =$

ج) $\frac{(x-2)(x-4)}{(x-3)^2} =$

د) $\frac{(x-2)(x-4)}{x-3} =$

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

و) $\frac{x^2-3x+2}{x^2-4x+3} =$

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

ح) $\frac{x^2+3x+2}{x^2+2x+2} = \frac{x+1 \pm \sqrt{9-4}}{x+1 \pm \sqrt{4-12}} =$