

۱) $y^3 = 2x^2 - 1 \xrightarrow{x_1 = x_2} y_1^3 = y_2^3 \rightarrow y_1 = y_2$ تابع است

۲) $y^3 + y = 2x^2 + 1 \rightarrow y_1^3 + y_1 = y_2^3 + y_2$ تابع است

$y_1^3 - y_2^3 + y_1 - y_2 = 0 \quad (y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2) + (y_1 - y_2)$

$(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 1) = 0 \quad y_1 - y_2 = 0$

$y_1 = \frac{-y_2 \pm \sqrt{\Delta}}{2} \quad \Delta = y_2^2 - 4(y_2^2 + 1) = y_2^2 - 4y_2^2 - 4 = -3y_2^2 - 4$

$\Delta < 0 \rightarrow y_1 = y_2$ ۱.۵

۳) $y^3 + x^3 = 2x - 1 \xrightarrow{x_1 = x_2} y_1^3 + x_1^3 = 2x_1 - 1$

$y = \sqrt[3]{2x - 1 - x^3}$ تابع

$y_1^3 = y_2^3 \quad y_1 = y_2$ تابع

۴) $\tan \frac{\pi}{4} = \frac{\sin}{\cos} = \frac{1}{1} = 1$

۵) $\cot + \frac{\sqrt{\pi}}{4} = \cot + \frac{\sqrt{10}}{4} = \frac{1}{\frac{\sqrt{10}}{4}} = \frac{4}{\sqrt{10}}$ ✓

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

۷) $\cot + 110^\circ = \frac{\cos}{\sin} 110^\circ = \frac{-1}{0} \Rightarrow$ مربع

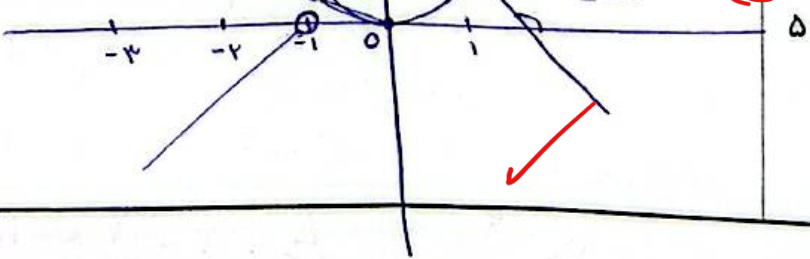
۸) $\sin \alpha = \frac{1}{\sqrt{2}}$

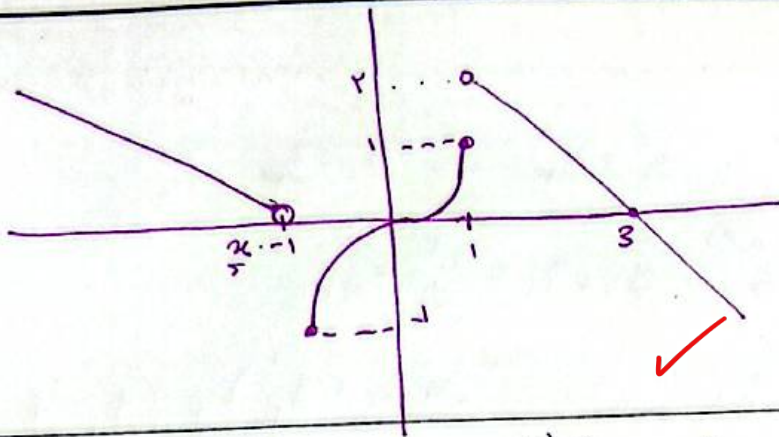
$30^\circ, 150^\circ \rightarrow \frac{\pi}{6}, \frac{5\pi}{6}$ ✓

۹) $\cos \alpha = \frac{\sqrt{2}}{2}$

$45^\circ, 315^\circ \rightarrow \frac{\pi}{4}, \frac{7\pi}{4}$ ✓

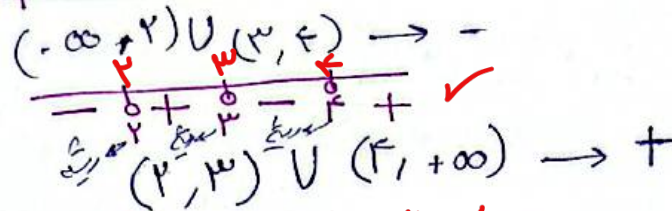
این دایره (۰) است و این دایره (۱) است



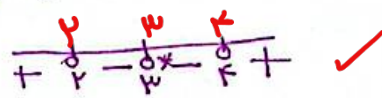


٢

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

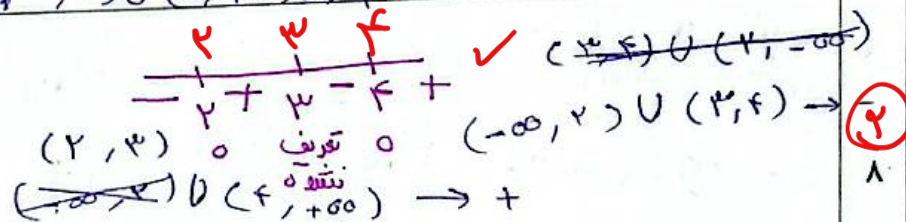


ب) $y=(x-2)(x-3)(x-4)$
 $x=2$
 $x=3$
 $x=4$

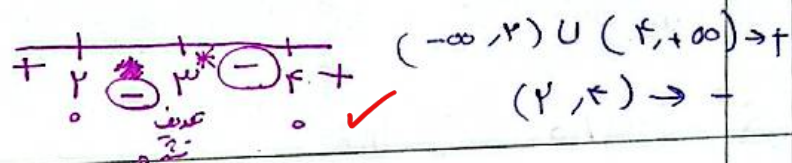


٢

الف) $y = \frac{(x-2)(x-4)}{x-3}$

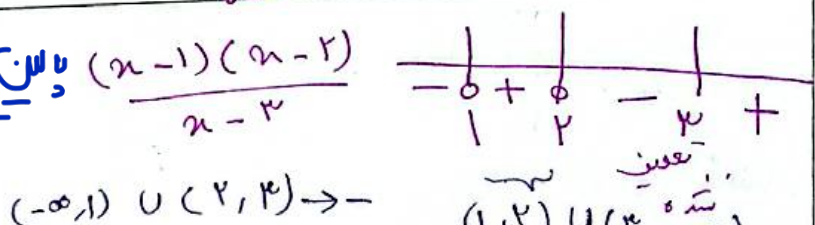


ب) $y = \frac{(x-2)(x-4)}{(x-3)(x-4)}$



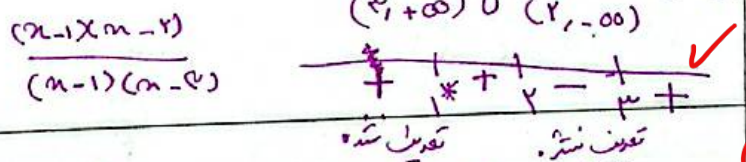
٢

الف) $y = \frac{x^2 - 3x + 2}{x-3}$



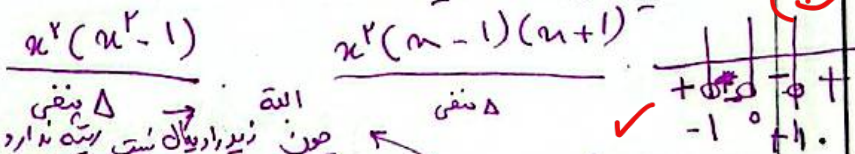
$(x, 3) \rightarrow -$

ب) $y = \frac{x^2 - 3x + 2}{x^2 - 4x + 3}$

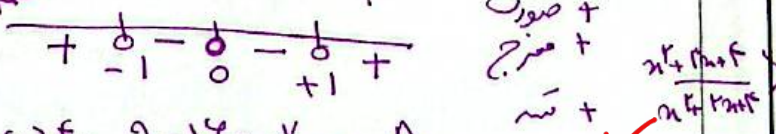


١

الف) $y = \frac{x^2 - x^2}{x^2 + x + 2} \rightarrow \Delta$



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



٢

$(x+1)(x+1)$

$3^2 - 4(1) = 9 - 4 = 5 = \Delta$

$P \in R$

$\Delta = 4 - 12 = -8$

$x \in R \rightarrow$

۲! سوال نقص برای اینده نشودن برای یک راجعه تابع نیست!

۹

الف) $y = \frac{x^3 - 3x + 2}{x - 3}$

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

$\xrightarrow{3}$

ریشه‌ها $\Rightarrow -2$ و 3

