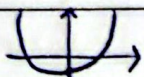


نام و نام خانوادگی: ... نام و نام خانوادگی ...  
 پاسخنامه تشریحی تکلیف شماره ... کلاس ...  
 درس: ...

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

ب)  $y^3 + y = 3x^2 - 1$

تابع است  $y_1^3 + y_1 = 3x_1^2 - 1 \xrightarrow{x_1 = x_2} y_1^3 + y_1 = y_2^3 + y_2 \rightarrow y_1 = y_2$   
 $y_2^3 + y_2 = 3x_2^2 - 1$

الف)  $y = x^2 - 1$   تابع است خط موازی محور  $y$  نمودار را یکبار قطع می کند

تابع نیست  $|y| + xy = x^2 + 1 \xrightarrow{x=0} |y| + 0 \cdot y = 0^2 + 1 \rightarrow |y| = 1 \rightarrow y = \pm 1$

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

د) تابع است  $\sqrt[3]{y} + \sqrt[3]{x} = 2 \rightarrow \sqrt[3]{y_1} + \sqrt[3]{x_1} = 2 \xrightarrow{x_1 = x_2} \sqrt[3]{y_1} + \sqrt[3]{x_1} = \sqrt[3]{y_2} + \sqrt[3]{x_2} \rightarrow \sqrt[3]{y_1} = \sqrt[3]{y_2} \rightarrow y_1 = y_2$

الف)  $\tan \frac{\pi}{3} : \tan 60^\circ \rightarrow \frac{\sin}{\cos} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$

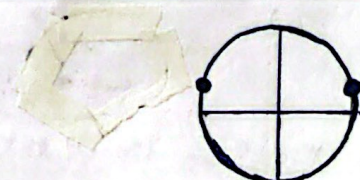
ج)  $\tan 330^\circ \rightarrow \frac{\sin}{\cos} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$

ب)  $\cot \frac{\sqrt{\pi}}{6} : \cot 11^\circ \rightarrow \frac{\cos}{\sin} = \frac{\frac{-\sqrt{3}}{2}}{-\frac{1}{2}}$

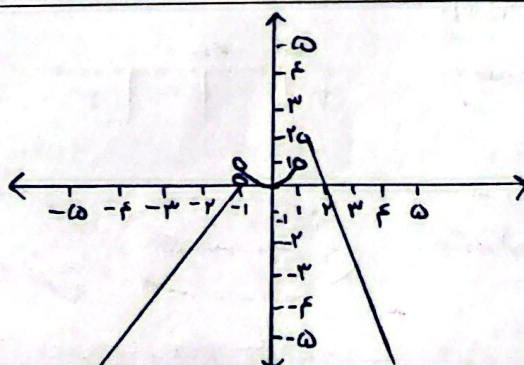
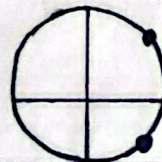
د)  $\cot 180^\circ \rightarrow \frac{\cos}{\sin} = \frac{1}{0} \rightarrow$

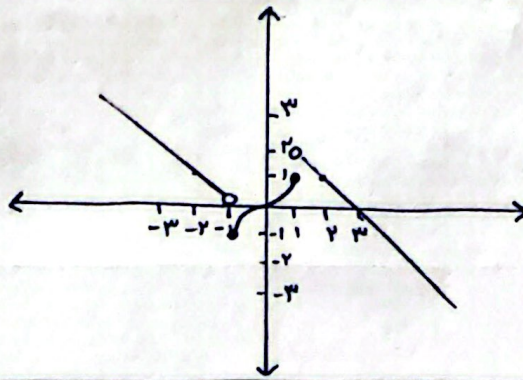
تعریف نشده

الف)  $\sin \alpha = \frac{1}{4} \rightarrow \alpha = \left\{ 2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right\}$



ب)  $\cos \alpha = \frac{\sqrt{2}}{4} \rightarrow \alpha = \left\{ 2k\pi \pm \frac{\pi}{4} \right\}$





6

الف)  $y = (x-2)(x-3)(x-4)$

| 2 | 3 | 4 |
|---|---|---|
| - | + | - |
| + | - | + |

7

ب)  $y = (x-2)(x-3)^2(x-4)$

| 2 | 3 | 4 |
|---|---|---|
| + | - | - |
| - | + | + |

الف)  $y = \frac{(x-2)(x-4)}{x-3}$

| 2 | 3 | 4 |
|---|---|---|
| - | + | - |
| + | - | + |

8

ب)  $y = \frac{(x-2)(x-4)}{(x-3)^2}$

| 2 | 3 | 4 |
|---|---|---|
| + | - | - |
| - | + | + |

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

ب)  $y = \frac{x^3 - 3x^2 + 2}{x^3 - 4x^2 + 3} = \frac{(x-1)(x-2)}{(x-1)(x-3)} \rightarrow \frac{x-2}{x-3}$

9

الف)  $y = \frac{x^4 - x^2}{x^2 + 9x + 2} \rightarrow \frac{x^2(x^2 - 1)}{x^2 + 9x + 2}$

| -1 | 0 | 1 |
|----|---|---|
| +  | - | - |
| -  | + | + |

$\Delta = 1 - 1 = -7 < 0$

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

ریشه ندارد  
ریشه ندارد  
ریشه مثبت

$\Delta = 9 - 12 = -3 < 0$

$\Delta = 4 - 12 = -8 < 0$

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