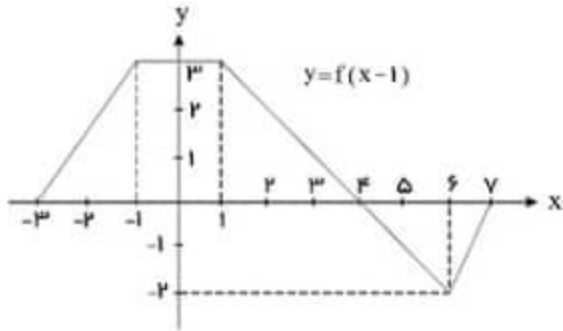
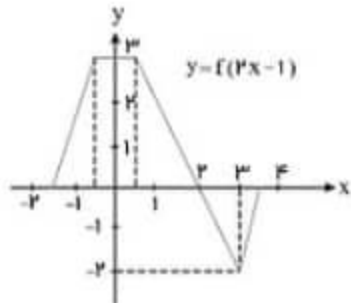


ردیف	پاسخنامه	بارم
۱	$f = \{(-6, m), (-4, m-2), (5, m^2-2)\}$ ۱) $m-2 < m \Rightarrow -2 < 0$ همواره برقرار است: ۲) $m^2-2 < m-2 \Rightarrow m^2 < m \Rightarrow m^2-m < 0 \Rightarrow m(m^2-1) < 0$ $\frac{m}{m(m^2-1)} \mid \begin{array}{ccccccc} -\infty & -1 & 0 & 1 & +\infty \\ - & 0 & + & 0 & - & 0 & + \end{array} \Rightarrow m < -1 \text{ یا } 0 < m < 1$	۱/۵
۲	$3-2x \geq 0 \Rightarrow x \leq \frac{3}{2} \Rightarrow D_f = (-\infty, \frac{3}{2}]$, $D_g = R - \{\frac{5}{3}\}$ $D_{f \circ g} = \{x \in D_g; g(x) \in D_f\} = \{x \in R - \{\frac{5}{3}\}, \frac{6}{3x-5} \in (-\infty, \frac{3}{2}]\}$ $\frac{6}{3x-5} \leq \frac{3}{2} \Rightarrow \frac{2}{3x-5} \leq \frac{1}{2} \Rightarrow \frac{2}{3x-5} - \frac{1}{2} \leq 0 \Rightarrow \frac{4-3x+5}{2(3x-5)} \leq 0 \Rightarrow \frac{-3x+9}{2(3x-5)} \leq 0$ $\frac{x}{\frac{5}{3} \quad 3} \mid \begin{array}{cc} - & + & - \end{array} \Rightarrow D_{f \circ g} = (-\infty, \frac{5}{3}) \cup [3, +\infty)$	۱/۵
۳	 	۱
۴	$3 = 2f(\lambda) + 1 \Rightarrow f(\lambda) = 1$ $3x + 5 = \lambda \Rightarrow x = 1$, $y = 3 - 1 = 2 \Rightarrow A'(1, 2)$	۱
۵	$f(x) = x^2 + 6x - 3 = (x+3)^2 - 12$ $f(x_1) = f(x_2) \Rightarrow (x_1+3)^2 - 12 = (x_2+3)^2 - 12 \Rightarrow x_1+3 = x_2+3 $ $\Rightarrow -(x_1+3) = -(x_2+3) \Rightarrow x_1 = x_2$ $y = (x+3)^2 - 12 \Rightarrow y+12 = (x+3)^2 \Rightarrow \sqrt{y+12} = x+3 \Rightarrow$ $x+3 = -\sqrt{y+12} \Rightarrow x = -3 - \sqrt{y+12} \Rightarrow f^{-1}(x) = -3 - \sqrt{x+12}$	۱/۵

۱/۵	$\frac{T}{r} = 2\pi \Rightarrow T = 4\pi \Rightarrow \frac{2\pi}{ b } = 4\pi \Rightarrow b = \frac{1}{2} \Rightarrow b = \pm \frac{1}{2}$ $\begin{cases} y_{\max} = a + c = 2 \\ y_{\min} = - a + c = -6 \end{cases} \Rightarrow 2c = -4 \Rightarrow c = -2 \Rightarrow a = 4 \xrightarrow{a > 0} a = 4$	۶														
۱	$\sin^2 x = \frac{1 - \cos 2x}{2} \Rightarrow \sin^2 22/5^\circ = \frac{1 - \cos 44^\circ}{2} = \frac{1 - \frac{\sqrt{2}}{2}}{2} = \frac{2 - \sqrt{2}}{4} \Rightarrow \sin 22/5^\circ = \frac{\sqrt{2 - \sqrt{2}}}{2}$ $\cos^2 x = \frac{1 + \cos 2x}{2} \Rightarrow \cos^2 15^\circ = \frac{1 + \cos 30^\circ}{2} = \frac{1 + \frac{\sqrt{3}}{2}}{2} = \frac{2 + \sqrt{3}}{4} \Rightarrow \cos 15^\circ = \frac{\sqrt{2 + \sqrt{3}}}{2}$	۷														
۲	$\sin x = 1 + \cos x \Rightarrow \sin \frac{x}{2} \cos \frac{x}{2} = 2 \cos^2 \frac{x}{2} \Rightarrow \begin{cases} \cos \frac{x}{2} = 0 \Rightarrow \frac{x}{2} = k\pi + \frac{\pi}{2} \Rightarrow x = 2k\pi + \pi \\ \sin \frac{x}{2} = \cos \frac{x}{2} \Rightarrow \tan \frac{x}{2} = 1 = \tan \frac{\pi}{4} \Rightarrow \end{cases}$ $\frac{x}{2} = k\pi + \frac{\pi}{4} \Rightarrow x = 2k\pi + \frac{\pi}{2}$	۸														
۱/۵	$\begin{cases} f(1) = 3 \Rightarrow 1 + m + 1 - n = 3 \\ f(-2) = 0 \Rightarrow -4 + 4m - 2 - n = 0 \end{cases} \Rightarrow \begin{cases} m - n = 1 \\ 4m - n = 1 \end{cases} \Rightarrow m = 2 \Rightarrow n = 1$	۹														
۱	$\lim_{x \rightarrow 2} \frac{-3x^2 + x + 1}{x^2 - 4x + 4} = \lim_{x \rightarrow 2} \frac{-3x^2 + x + 1}{(x - 2)^2} = \frac{-9}{0^+} = -\infty$ $\lim_{x \rightarrow \infty} \frac{\Delta x + x - 4 }{x - \sqrt{x^2 - 1}} = \lim_{x \rightarrow \infty} \frac{\Delta x + x }{x - x } = \frac{\Delta x - x}{x + x} = \frac{4x}{2x} = 2$	۱۰														
۱	$-3x^2 + ax + b = -3(x + 1)^2 = -3(x^2 + 2x + 1) = -3x^2 - 6x - 3 \Rightarrow a = -6, b = -3$	۱۱														
۱	$2a - 1 = 0 \Rightarrow a = \frac{1}{2}, a + 2b = 0 \Rightarrow \frac{1}{2} + 2b = 0 \Rightarrow b = -\frac{1}{4}, \frac{2c}{4c - 3} = 2 \Rightarrow 2c = 2c - 6 \Rightarrow c = -6$	۱۲														
۱	<table border="1"> <tr> <td>مقدار مشتق تابع</td> <td>-۳</td> <td>-۱</td> <td>۰</td> <td>۰/۵</td> <td>۱</td> <td>۲</td> </tr> <tr> <td>نقطه مناظر</td> <td>F</td> <td>C</td> <td>E</td> <td>A</td> <td>B</td> <td>D</td> </tr> </table>	مقدار مشتق تابع	-۳	-۱	۰	۰/۵	۱	۲	نقطه مناظر	F	C	E	A	B	D	۱۳
مقدار مشتق تابع	-۳	-۱	۰	۰/۵	۱	۲										
نقطه مناظر	F	C	E	A	B	D										
۱	$f(2) = 8 - 4 + 1 = 5 \Rightarrow A(2, 5)$ $f'(2) = \lim_{x \rightarrow 2} \frac{f(x) - f(2)}{x - 2} = \lim_{x \rightarrow 2} \frac{2x^2 - 2x - 4}{x - 2} = \lim_{x \rightarrow 2} \frac{2(x - 2)(x + 1)}{x - 2} = 6$ $y - y_A = m(x - x_A) \Rightarrow y - 5 = 6(x - 2) \Rightarrow y = 6x - 7$	۱۴														
موفق و پیروز باشید.																