

$f(a) = (a+1)(a+2) = va + v \quad f(-1) = 0a + 1$ $f(a+1) = va + 2a + 1 \quad f(a+2) = va + 3$	$\textcircled{2}$
$(x+\sqrt{x})(x-\sqrt{x}) = 1 \Rightarrow x+\sqrt{x} = \frac{1}{x-\sqrt{x}} \Rightarrow f(x+\sqrt{x}) = f(x-\sqrt{x}) = f\left(\frac{1}{x-\sqrt{x}}\right)$ $\sqrt{x+\sqrt{x}} = (\sqrt{x}+\sqrt{x})^2 = 4x \Rightarrow \sqrt{x} = 2\sqrt{x} \Rightarrow x = \frac{4}{3}$ $(t-m)(t-n) = 0 \Rightarrow t = m \text{ or } t = n \Rightarrow t^2 - (m+n)t + mn = 0 \Rightarrow t^2 - 4t + \frac{4}{3} = 0$ $t = \frac{4 \pm \sqrt{16 - \frac{16}{3}}}{2} = \frac{4 \pm \frac{4\sqrt{2}}{3}}{2} = 2 \pm \frac{2\sqrt{2}}{3}$ $\Rightarrow f\left(2 \pm \frac{2\sqrt{2}}{3}\right) = \left(2 \pm \frac{2\sqrt{2}}{3}\right)^2 = 4 \pm \frac{8\sqrt{2}}{3} + \frac{8}{9}$	$\textcircled{2}$
$f(0) = 0 \quad f(x) = ax^2 + bx + c$ $f(1) = 4 \quad f(-1) = 4$ $f(1) + f(-1) = 8 \Rightarrow 2a + 2c = 8 \Rightarrow a + c = 4$ $f(1) - f(-1) = 0 \Rightarrow 2b = 0 \Rightarrow b = 0$ $f(1) = a + c = 4$ $f(-1) = a + c = 4$ $\Rightarrow a = 4, c = 0$	$\textcircled{2}$
$x = 0 \Rightarrow 4f(0) = 4m - 1 \xrightarrow{x^2} 4f(x) = 4m - x^2$ $x = -1 \Rightarrow 4f(-1) = 4m - 1 - 1 = 4m - 2$	$\textcircled{1}$
صورت سوال اشتباه دیدی چه	$f(0) = 4, 25$
$ax + b + \frac{a}{x} + b = ax + b + \frac{a}{x} = \frac{ax^2 + bx + a}{x} = \frac{4x^2 - 12x + 4}{x}$ $\Rightarrow a = 4, b = -4 \quad f(x) = 4x - 4 \quad x = -1 \Rightarrow f(x) = -8$	$\textcircled{2}$