

$$-x^2 + bx + 2 \rightarrow \frac{-b}{2a} = 1 \rightarrow \frac{-(b' + 12)}{-1} = 1 \rightarrow b' = 18 - 12 \Rightarrow b = 6$$

۱) $f(x) = x^2 + 12x + 2 \rightarrow \Delta < 0 \rightarrow$ همواره

۲) $x^2 - 2x - 10 = 0 \rightarrow (x-5)(x+2) = 0 \rightarrow x = 5 \text{ یا } x = -2$
 $\Delta = 2^2 - 4(-10) = 4 + 40 = 44 \rightarrow x = \frac{2 \pm \sqrt{44}}{2} = 1 \pm \sqrt{11}$

۳) $2x^2 - 14x + m = 0 \rightarrow 2x + 2 = \frac{14}{x} \rightarrow 2x^2 + 2x = 14 \rightarrow x^2 + x = 7$
 $\rightarrow \frac{m}{2} = \frac{c}{a} = 1 \left(\frac{14}{2} \right) \rightarrow m = 14$ $\Rightarrow 2x^2 - 14x + 14 = 0 \rightarrow \left[\frac{14}{2} = 7 \right]$

۴) $5x^2 - 4x + m - 1 = 0 \rightarrow 5x - \beta = 4 \rightarrow \beta = 5x - 4$
 $5x - 4 + \alpha = 4 \rightarrow 5x = 8 - \alpha \rightarrow \alpha = 8 - 5x$ $\Rightarrow \alpha \cdot \beta = \frac{c}{a} = \frac{m-1}{5} \Rightarrow m = 1$

۵) $-mx^2 + 6x + m^2 - 2 = 0 \rightarrow x = \frac{1}{m} \Rightarrow \alpha \times \frac{1}{\alpha} = \frac{c}{a} = \frac{m^2 - 2}{-m} = 1 \Rightarrow m^2 + m - 2 = 0$
 $(m+2)(m-1) = 0 \Rightarrow m = -2 \text{ یا } m = 1$
 if $m = -2 \rightarrow x^2 + 6x + 2 = 0 \rightarrow \Delta < 0$
 if $m = 1 \rightarrow -x^2 + 6x - 1 = 0 \rightarrow \Delta > 0$ $\Rightarrow m = 1$

۶) $\alpha, \beta \rightarrow x^2 - mx + 3 = 0 \rightarrow \alpha = \frac{3}{\beta} \rightarrow \beta = \frac{c}{a} = 3 = \frac{L}{H} \times \beta \rightarrow \frac{3}{\beta} = 3 \Rightarrow \beta = 1$
 $\Rightarrow \alpha = \frac{3}{1} = 3$ $\left[\frac{9}{1} = 9 \right]$ $\left[\frac{9}{1} = 9 \right]$

۷) $x^2 - 6x + m = 0 \rightarrow x = 3 \rightarrow 9 - 18 + m = 0 \rightarrow m = 9$

۸) $x^3 - 5x + 2 = 0 \rightarrow x + \beta = 5 \rightarrow \alpha \beta = 2 \Rightarrow \beta = \frac{2}{\alpha} \Rightarrow \alpha^3 + \beta^3 = \frac{8}{\alpha^3} + \alpha^3$
 $\Rightarrow 5^3 - 3 \cdot 5 \cdot \beta = 125 - 15 \cdot \frac{2}{\alpha} = 125 - \frac{30}{\alpha}$

۹) $h(t) = -1.6t^2 + 4.8t \rightarrow h_{max} = \frac{-b}{2a} = \frac{4.8}{3.2} = 1.5$
 $h = 0 \rightarrow 1.6t(-t + 3) = 0 \rightarrow t = 0 \text{ یا } t = 3$

