

مطلوبه: جواب را بیابید.  $x^2 + 7x + 10 = 0$

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 $\begin{cases} a=1 \\ b=7 \\ c=10 \end{cases}$

$\Delta = b^2 - 4ac = 7^2 - 4(1)(10) = 49 - 40 = 9$

$\Delta = (-7 \pm \sqrt{9})$   
 $\Delta = (-7 \pm 3)$   
 $\Delta = (-7 + 3)$   
 $\Delta = (-7 - 3)$   
 $\Delta = -4$   
 $\Delta = -10$

$x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-7 \pm \sqrt{9}}{2(1)}$   
 $\frac{-7+3}{2} = \frac{-4}{2} = -2$   
 $\frac{-7-3}{2} = \frac{-10}{2} = -5$

$x^2 - x - 4 = 0$   
 $\begin{cases} a=1 \\ b=-1 \\ c=-4 \end{cases}$

$\Delta = b^2 - 4ac = (-1)^2 - 4(1)(-4) = 1 + 16 = 17$

$x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-(-1) \pm \sqrt{17}}{2(1)}$   
 $\frac{1+\sqrt{17}}{2}$   
 $\frac{1-\sqrt{17}}{2}$

$x^2 + 11x + 10 = 0$   
 $\begin{cases} a=1 \\ b=11 \\ c=10 \end{cases}$

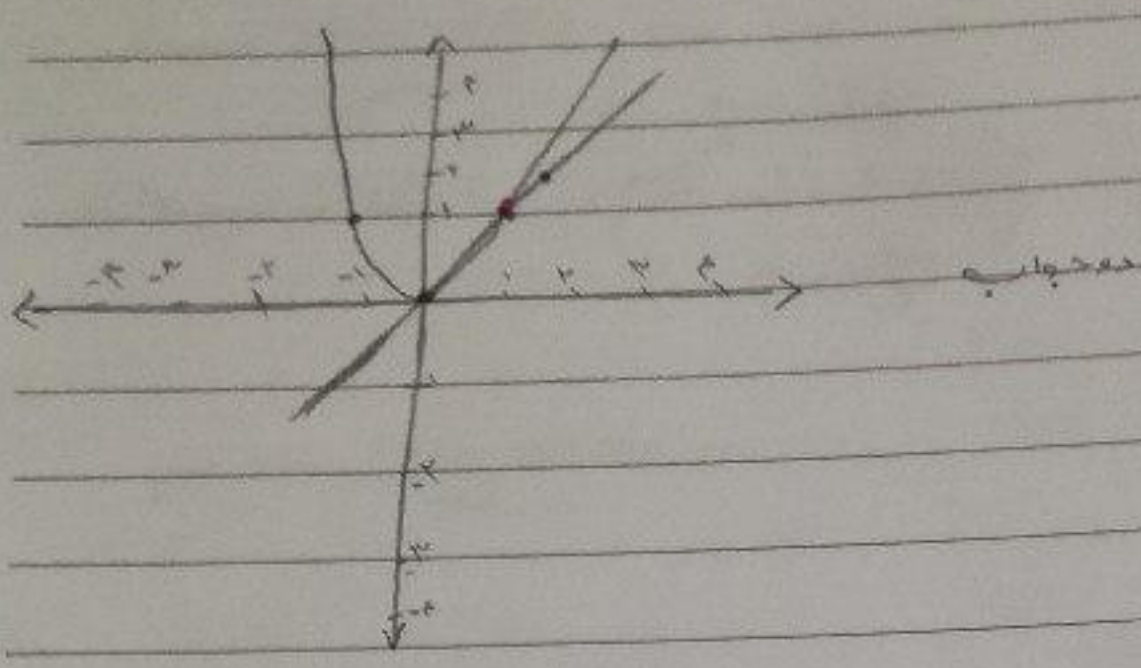
$\Delta = b^2 - 4ac = 11^2 - 4(1)(10) = 121 - 40 = 81$

$x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-11 \pm \sqrt{81}}{2(1)}$   
 $\frac{-11+9}{2} = \frac{-2}{2} = -1$   
 $\frac{-11-9}{2} = \frac{-20}{2} = -10$

۱۳- معادلات زیر را به روش هندسی حل کنید.

$x^4 - 2x = 0$  (الف)  
 $x^4 = 2x$   
 $x^3 = 2$   
 $x = \sqrt[3]{2}$

$x^4 - 2x^2 = 0$  (ب)  
 $x^2(x^2 - 2) = 0$   
 $x^2 = 0$  or  $x^2 = 2$   
 $x = 0$  or  $x = \pm\sqrt{2}$



$x^4 + 3x - 1 = 0$  (ب)  
 $x^4 = -3x + 1$

$\begin{cases} x = x^2 \\ y = -3x + 1 \end{cases}$

$y = -3(0) + 1 = 1$   
 $y = -3(1) + 1 = -2$

