

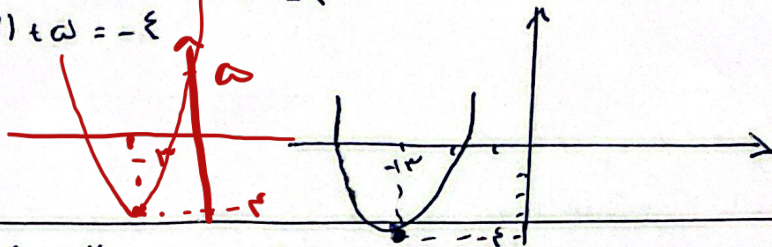
۱۹۱۷۵

نام و نام خانوادگی: کلاس: پاسخنامه تشریحی تکلیف شماره:
 عرض از مبدأ

$$y = x^2 + 7x + 5 \Rightarrow a > 0 \Rightarrow \min$$

$$\text{ext} \mid \frac{-b}{2a} = \frac{-7}{2} = -3.5 \Rightarrow \text{ext} \mid -3.5$$

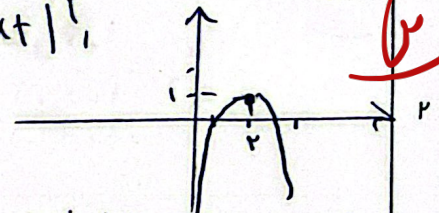
$$y = (-3.5)^2 + 7(-3.5) + 5 = -4$$



۱, ۷۵

$$y = -x^2 + 4x - 3 \Rightarrow a < 0 \Rightarrow \max$$

$$y = -4 + 8 - 3 = 1 \quad \text{ext} \mid \frac{-b}{2a} = \frac{-4}{-2} = 2 \Rightarrow \text{ext} \mid 2$$



$$\Delta = b^2 - 4ac = 16 - 12 = 4$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-4 \pm 2}{-2} \Rightarrow x = 1, x = 3$$

مختصات را در نقاط
و ۱ و ۳

$\Delta > 0 \Rightarrow$ معادله دو جواب متمایز
حقیقی دارد

$\Delta = 0 \Rightarrow$ معادله دارای یک
ریشه مضاعف

$\Delta < 0 \Rightarrow$ معادله بدون ریشه

$\Delta \geq 0 \Rightarrow$ معادله دارای ریشه

$$b^2 - 4ac > 0$$

$$(-3)^2 - 1a > 0 \Rightarrow 9 > 1a \Rightarrow \frac{9}{1} > a$$

$$b^2 - 4ac = 0$$

$$(-3)^2 - 1a = 0$$

$$b^2 - 4ac < 0$$

$$(-3)^2 - 1a < 0$$

$$b^2 - 4ac > 0 \Rightarrow \frac{9}{1} > a$$

$$\frac{9}{1} > a$$

$$\text{الف} \mid x^2 - 2x - 1 = 0 \Rightarrow x^2 - 2x + 1 = 2$$

$$(x-1)^2 = 2 \Rightarrow x-1 = \pm\sqrt{2}$$

$$\begin{cases} x = 1 + \sqrt{2} \\ x = 1 - \sqrt{2} \end{cases}$$

$$\text{الف} \mid x^2 - x - 1 = 0 \Rightarrow x^2 - x + \frac{1}{4} = \frac{5}{4}$$

$$\begin{cases} x = \frac{1 + \sqrt{5}}{2} \\ x = \frac{1 - \sqrt{5}}{2} \end{cases}$$

$$(x - \frac{1}{2})^2 = \frac{5}{4} \Rightarrow x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}}$$

$$\Rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{1 \pm \sqrt{5}}{2}$$

$$\text{الف} \mid x^2 - 2x - 1 = 0$$

$$\Delta = b^2 - 4ac = 4 - 4(-1) = 8$$

$$\text{الف} \mid x^2 + x - 4 = 0$$

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

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-1 \pm \sqrt{17}}{2}$$

$$\begin{aligned} x_1 &= \frac{1 + \sqrt{5}}{2} = \frac{1 + 2.236}{2} = 1.618 \\ x_2 &= \frac{1 - \sqrt{5}}{2} = \frac{1 - 2.236}{2} = -0.618 \end{aligned}$$

الف) $x^2 - 11x + 28 = 0$
 $(x-7)(x-4) = 0 \Rightarrow \begin{cases} x=7 \\ x=4 \end{cases}$
 بیش یا بر صفر باشد
 ب) $x^2 + 3x - 28 = 0$
 $(x+7)(x-4) = 0 \Rightarrow \begin{cases} x=-7 \\ x=4 \end{cases}$

۶

الف) $5x^2 - 12x + 7 = 0$
 $x^2 - 12x + 35 = 0$
 $(x-7)(x-5) = 0 \Rightarrow \begin{cases} x=7 \\ x=5 \end{cases}$
 مشتق را تقسیم می کنیم.
 ب) $3x^2 - 10x + 7 = 0$
 $x^2 - 10x + 21 = 0$
 $(x-7)(x-3) = 0 \Rightarrow \begin{cases} x=7 \\ x=3 \end{cases}$

۷

الف) $4x^2 - 5x + 3 = 0$
 $x^2 - 5x + 3 = 0$
 $(x-3)(x-2) = 0 \Rightarrow \begin{cases} x=3 \\ x=2 \end{cases}$
 ب) $2x^2 + 5x + 3 = 0$
 $x^2 + 5x + 3 = 0$
 $(x+3)(x+2) = 0 \Rightarrow \begin{cases} x=-3 \\ x=-2 \end{cases}$
 ج) $2x^2 - 5x + 1 = 0$
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{5 \pm \sqrt{25 - 8}}{4} = \frac{5 \pm \sqrt{17}}{4}$
 $\Rightarrow \begin{cases} x = \frac{5 + \sqrt{17}}{4} \\ x = \frac{5 - \sqrt{17}}{4} \end{cases}$
 د) $x^2 + 7x + 9 = 0$
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-7 \pm \sqrt{49 - 36}}{2} = \frac{-7 \pm \sqrt{13}}{2}$
 $\Rightarrow \begin{cases} x = \frac{-7 + \sqrt{13}}{2} \\ x = \frac{-7 - \sqrt{13}}{2} \end{cases}$

۸

الف) $3^2 - 2p = 3^2 - 2(-2) = 9 + 4 = 13$
 $3^2 - 3p = 3^2 - 3(3 \times (-2)) = 9 - (-18) = 27 + 18 = 45$
 $3^2 - 2p = 3^2 - 2(-2) = 9 + 4 = 13$
 $3^2 - 3p = 3^2 - 3(3 \times (-2)) = 9 - (-18) = 27 + 18 = 45$

۹

الف) $\left(\frac{7}{5}\right) + \left(\frac{9}{2}\right) = \frac{7 \times 2}{5 \times 2} + \frac{9 \times 5}{2 \times 5} = \frac{14}{10} + \frac{45}{10} = \frac{59}{10}$
 ب) $\left(\frac{9}{3}\right) - \left(\frac{1}{2}\right) = \frac{9 \times 2}{3 \times 2} - \frac{1 \times 3}{2 \times 3} = \frac{18}{6} - \frac{3}{6} = \frac{15}{6} = \frac{5}{2}$

۱۰