

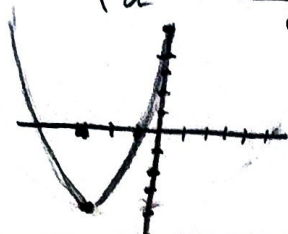
۱۹,۷۵

پاسخنامه تشریحی تکلیف شماره ۱... کلاس ۲۰۲۰

نام و نام خانوادگی

ext $\left| \frac{-b}{2a} = \frac{-(-2)}{2} = 1 \right.$

$\left| \frac{-\Delta}{4a} = -\frac{(b^2 - 4ac)}{4a} = -\frac{(4 - 4 \times 1 \times 5)}{4} = -1 \right. \left. \begin{matrix} -2 \\ -4 \end{matrix} \right\}$



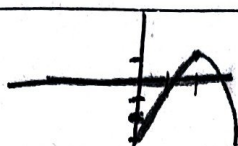
$a > 0$
min

الف

۲

ext $\left| \frac{-b}{2a} = \frac{-(-2)}{2} = 1 \right.$

$\left| \frac{-\Delta}{4a} = -\frac{(b^2 - 4ac)}{4a} = -\frac{(4 - 4 \times 1 \times (-3))}{-4} = 1 \right.$



$a < 0$
max

الف

۲

$\Delta = 4 - 4 \times 1 \times (-3) = 16$

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

$\Delta > 0 \Rightarrow b^2 - 4ac > 0 \Rightarrow 4 - 4 \times 1 \times a > 0 \Rightarrow a < 1$

$\Delta = 0 \Rightarrow b^2 - 4ac = 0 \Rightarrow 4 - 4 \times 1 \times a = 0 \Rightarrow a = 1$

$\Delta < 0 \Rightarrow b^2 - 4ac < 0 \Rightarrow 4 - 4 \times 1 \times a < 0 \Rightarrow a > 1$

$\Delta \geq 0 \Rightarrow b^2 - 4ac \geq 0 \Rightarrow 4 - 4 \times 1 \times a \geq 0 \Rightarrow a \leq 1$

الف $x^2 - 2x - 1 = 0$

$x^2 - 2x + 1 = 2$

$(x - 1)^2 = 2$

$x - 1 = \pm \sqrt{2}$

$x = 1 + \sqrt{2}$ و $1 - \sqrt{2}$

$x = \frac{1 \pm \sqrt{5}}{2}$
 $x = \frac{1 \pm \sqrt{5}}{2}$

ب $x^2 + x - 1 = 0$

$2x \times \square = -1$

$\square = -\frac{1}{2x}$

$x^2 - x + \frac{1}{x} = \frac{\Delta}{x}$

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

$x - \frac{1}{x} = \pm \sqrt{\frac{\Delta}{x}}$

الف $x^2 - 2x - 1 = 0 \Rightarrow \Delta = b^2 - 4ac = 4 - 4 \times 1 \times (-1) = 8$

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

ب $x^2 + x - 1 = 0 \Rightarrow \Delta = b^2 - 4ac = 1 - 4 \times 1 \times (-1) = 5$

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

$$x^2 - 11x + 21 = 0$$

$$(x-3)(x-7) = 0 \quad x = 3, 7$$

الف

$$x^2 + 3x - 21 = 0 \quad (x+7)(x-3) \quad x = -7, 3$$

ب

$$ax^2 - 12x + 5 = 0 \Rightarrow x^2 - 12x + 35 = 0$$

$$(x-5)(x-7) \Rightarrow x = \frac{5}{a} \text{ و } \frac{7}{a} \Rightarrow 1, \frac{7}{5}$$

الف

$$3x^2 - 10x + 5 = 0 \Rightarrow x^2 - 10x + 1 = 0$$

ب

$$(x-3)(x-7) = 0$$

$$x = \frac{3}{3} \text{ و } \frac{7}{3} \Rightarrow 1, \frac{7}{3}$$

$$2x^2 - 5x + 3 = 0 \Rightarrow x^2 - 5x + 6 = 0$$

$$(x-2)(x-3) \Rightarrow x = \frac{2}{2}, \frac{3}{2} \Rightarrow 1, \frac{3}{2}$$

$$ج) 2x^2 - 5x + 1 = 0 \rightarrow \Delta = b^2 - 4ac$$

$$= 25 - 4 = 21$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{5 \pm \sqrt{21}}{4}$$

$$د) 2x^2 + 5x + 3 = 0 \Rightarrow x^2 + 5x + 6 = 0$$

$$(x+2)(x+3) \Rightarrow x = -\frac{2}{2} \text{ و } -\frac{3}{2} \Rightarrow -1, -\frac{3}{2}$$

$$هـ) 5x^2 + 7x + 9 = 0$$

$$\Delta = b^2 - 4ac = 49 - 180 = -131$$

$\Delta < 0 \Rightarrow$ جواب ندارد

حاصل جمع شده $\Rightarrow s = \frac{-b}{a} = 3$

حاصل ضرب شده $\Rightarrow p = \frac{c}{a} = -2$

الف) $s^2 - 2p = 9 + 4 = 13$

ب) $s^3 - 3sp = 27 - 3 \times 3 \times (-2) = 45$

الف) $\left(\frac{7}{5}\right) + \left(\frac{9}{2}\right) \Rightarrow \frac{7!}{5!2!} \Rightarrow \frac{7 \times 6 \times 5!}{5! \times 2!} = 21 \Rightarrow 3^2 + 2^2 = 13$

$\frac{9!}{5!2!} = \frac{9 \times 8 \times 7!}{5! \times 2!} = 36$

$\frac{1!}{5! \times 2!} = \frac{1 \times 7 \times 6!}{5! \times 2!} = 21$

د) $\left(\frac{9}{3}\right) - \left(\frac{1}{2}\right) \Rightarrow \frac{9!}{3!2!} = \frac{9 \times 8 \times 7!}{3! \times 2!} = 14$

$14 - 21 = -7$