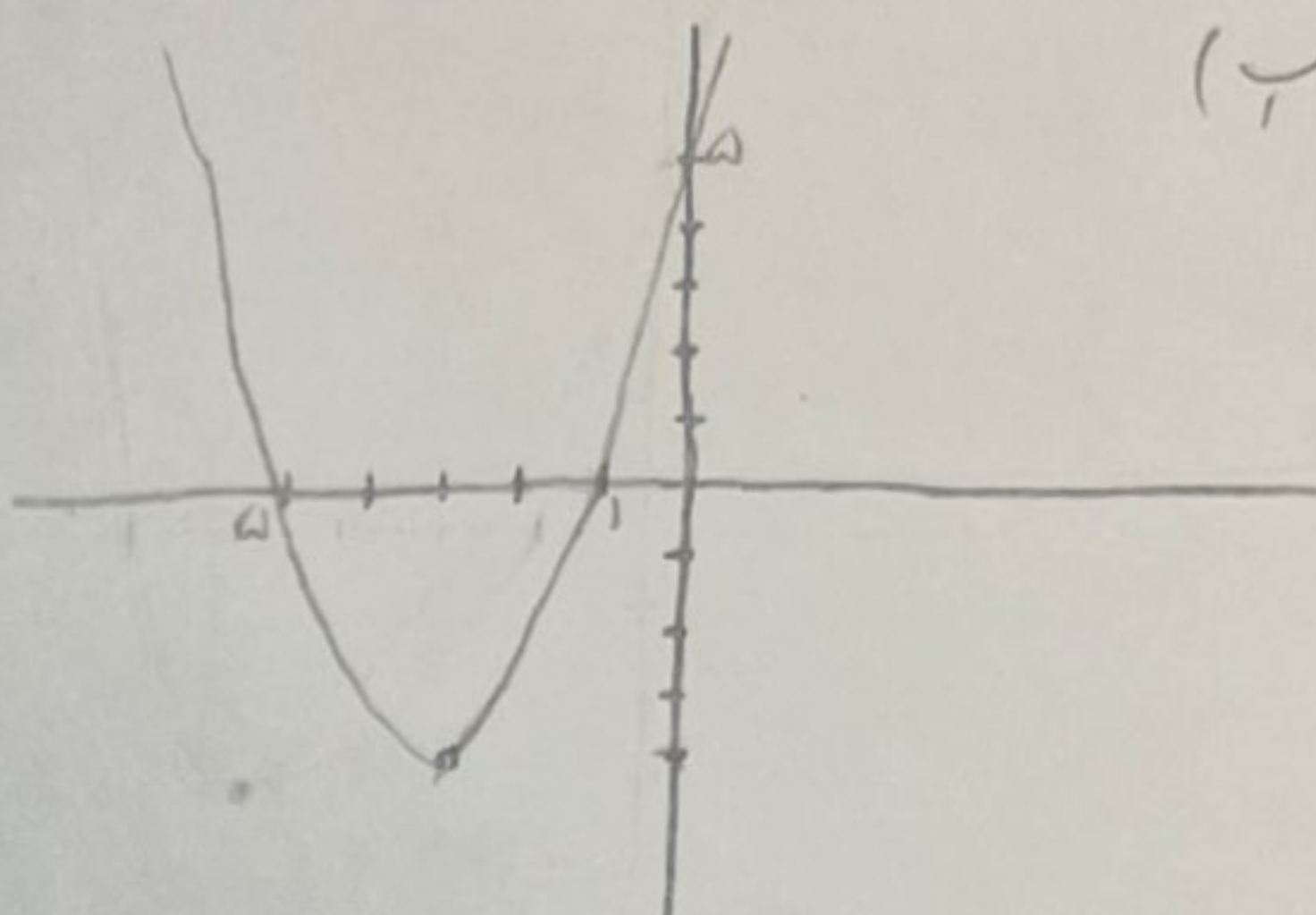


نام و نام خانوادگی آزمون پاسنامه تشریحی تکلیف شماره کلاس
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(الف) $y = x^2 + 6x + 4$ Min $\left \begin{array}{l} -\frac{b}{2a} = \frac{-6}{2} = -3 \\ 1 - 18 + 4 = -13 \end{array} \right.$ $(-3, -13)$ سپری رو به بالا (Min)	(ب) 	۱
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(الف) $y = -x^2 + 4x - 3$ Max $\left \begin{array}{l} -\frac{b}{2a} = \frac{-4}{-2} = 2 \\ -4 + 16 - 3 = 9 \end{array} \right.$ $(2, 9)$ سپری رو به پایین (Max)	(ب) $y = -x^2 + 4x - 3$ $y = 0 \downarrow$ $-x^2 + 4x - 3 = 0$ $x^2 - 4x + 3 = 0$ $(x-1)(x-3) = 0$ $\Downarrow$ $x = 1$ $x = 3$ نقاط $(1, 0)$ و $(3, 0)$	۲
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(الف) $2x^2 - 3x + a = 0$ $\Delta = b^2 - 4ac > 0$ $\Delta = (-3)^2 - 4(2)(a) = 9 - 8a$ $9 - 8a > 0 \rightarrow -8a > -9$ $a < \frac{9}{8}$	(ب) $2x^2 - 3x + a = 0$ $\Delta = b^2 - 4ac = 0$ $\Delta = (-3)^2 - 4(2)(a) = 0$ $9 - 8a = 0$ $8a = 9$ $a = \frac{9}{8}$	(ج) $2x^2 - 3x + a = 0$ $\Delta = b^2 - 4ac < 0$ $\Delta = (-3)^2 - 4(2)(a) < 0$ $9 - 8a < 0$ $-8a < -9$ $a > \frac{9}{8}$	(د) $2x^2 - 3x + a = 0$ $\Delta = b^2 - 4ac \geq 0$ $\Delta = (-3)^2 - 4(2)(a) \geq 0$ $9 - 8a \geq 0$ $-8a \geq -9$ $a \leq \frac{9}{8}$	۳
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(الف) $x^2 - 2x - 1 = 0$ $x^2 - 2x = 1 + 2 = 3$ $x^2 - 2x + 1 = 3 + 1 = 4$ $(x-1)^2 = 4$ $x-1 = \pm \sqrt{4}$ $x = 1 \pm \sqrt{4}$	(ب) $x^2 - 2x - 1 = 0$ $x^2 - 2x - 1 + \frac{1}{4} = \frac{1}{4}$ $x^2 - 2x + \frac{1}{4} = \frac{1}{4} + 1 = \frac{5}{4}$ $\left(x - \frac{1}{2}\right)^2 = \frac{5}{4}$ $x - \frac{1}{2} = \pm \sqrt{\frac{5}{4}} \Rightarrow x = \frac{1 \pm \sqrt{5}}{2}$	۴
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(الف) $x^2 - 2x - 1 = 0$ $\Delta = b^2 - 4ac$ $\Delta = 4 - 4(1)(-1) = 4 + 4 = 8$ $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$	(ب) $x^2 + x - 4 = 0$ $\Delta = b^2 - 4ac$ $\Delta = 1 - 4(1)(-4) = 1 + 16 = 17$ $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-1 \pm \sqrt{17}}{2}$	۵
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$x^2 - 11x + 28 = 0$ (الف) $(x-4)(x-7) = 0$ $x=7$ $x=4$	$x^2 + 3x - 28 = 0$ (ب) $(x-4)(x+7) = 0$ $x=4$ $x=-7$	۲		
$5x^2 - 12x + 7 = 0$ (الف) $5 \times 7 = 35$ $5x^2 - 7x - 4x + 7 = 0$ $(5x-7)(x-1) = 0$ $5x-7=0 \rightarrow x = \frac{7}{5}$ $x-1=0 \rightarrow x=1$	$3x^2 - 10x + 7 = 0$ (ب) $3 \times 7 = 21$ $3x^2 - 7x - 3x + 7 = 0$ $(3x-7)(x-1) = 0$ $3x-7=0 \rightarrow x = \frac{7}{3}$ $x-1=0 \rightarrow x=1$	۲		
$2x^2 - 4x + 3 = 0$ (الف) $2 \times 3 = 6$ $2x^2 - 2x + 2x + 3 = 0$ $(2x-3)(x-1) = 0$ $x=1$ $x=\frac{3}{2}$	$2x^2 + 4x + 3 = 0$ (ب) $2 \times 3 = 6$ $2x^2 + 2x + 2x + 3 = 0$ $(2x+3)(x+1) = 0$ $x=-1$ $x=-\frac{3}{2}$	$2x^2 - 4x + 1 = 0$ (ج) $\Delta = b^2 - 4ac$ $\Delta = 16 - 4(2)(1) = 8$ $x = \frac{-b \pm \sqrt{\Delta}}{2a}$ $x = \frac{2 \pm \sqrt{2}}{2}$	$4x^2 + 7x + 9 = 0$ (د) $\Delta = b^2 - 4ac$ $\Delta = 49 - 4(4)(9) = -95$ ریشه حقیقی ندارد ۲	
$x^2 - 3x - 2 = 0$ $\Delta = b^2 - 4ac$ $\Delta = 9 - 4(1)(-2) = 17$ $x_1 = \frac{3 + \sqrt{17}}{2}, x_2 = \frac{3 - \sqrt{17}}{2}$ $P = x_1 \cdot x_2 = \frac{3 + \sqrt{17}}{2} \times \frac{3 - \sqrt{17}}{2} = \frac{9 - 17}{4} = -2$ $S = x_1 + x_2 = \frac{3 + \sqrt{17}}{2} + \frac{3 - \sqrt{17}}{2} = \frac{6}{2} = 3$ الف) $S^2 - 2P = 3^2 - 2(-2) = 9 + 4 = 13$ ب) $S^3 - 3SP = 3^3 - 3(3)(-2) = 27 + 18 = 45$				
$\binom{9}{5} = \frac{9!}{5!(9-5)!} = \frac{9 \times 8 \times 7 \times 6}{4! \times 1!} = 252$ $\binom{9}{2} = \frac{9!}{2!(9-2)!} = \frac{9 \times 8 \times 7!}{2! \times 7!} = 36$ $\binom{9}{5} + \binom{9}{2} = 252 + 36 = 288$		$\binom{9}{3} = \frac{9!}{3!(9-3)!} = \frac{9 \times 8 \times 7 \times 6!}{6! \times 3!} = 84$ $\binom{9}{2} = \frac{9!}{2!(9-2)!} = \frac{9 \times 8 \times 7!}{2! \times 7!} = 36$ $\binom{9}{3} - \binom{9}{2} = 84 - 36 = 48$		۱۱۷۵