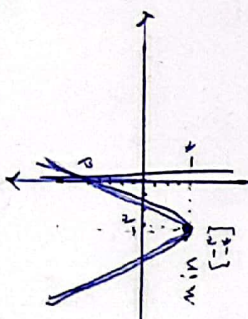
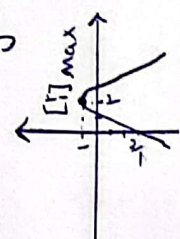


نام و نام خانوادگی: پاسنامه تشریحی تکلیف شماره کلاس دبیر:

الف) $y = x^2 + 6x + 5 \rightarrow 0 = x^2 + 6x + 5$ Min معمولاً $x = \frac{-b}{2a} = \frac{-6}{2 \times 1} = -3$ جای نداشتی $\rightarrow y = (-3)^2 + 6(-3) + 5 = -4$ ب) $y = 4 - 18 + 5 \rightarrow y = -9$ 	الف) $x = \frac{-b}{2a} \rightarrow \frac{-(-4)}{2(-1)} = \frac{4}{-2} = -2$ جای نداشتی $\rightarrow y = -(-2)^2 + 4(-2) - 3 = -11$ ب) روش دلتا دلتا را حساب می‌کنیم. $\Delta = (-4)^2 - 4(-1)(-3) = 16 - 12 = 4$ $x_1 = \frac{-(-4) + \sqrt{4}}{2(-1)} = \frac{4 + 2}{-2} = -3$ $x_2 = \frac{-(-4) - \sqrt{4}}{2(-1)} = \frac{4 - 2}{-2} = -1$ جای نداشتی $\rightarrow y = -(-1)^2 + 4(-1) - 3 = -8$ 	الف) $\Delta = (-3)^2 - 4(1)(5) = 9 - 20 = -11$ $q - 18a > 0 \rightarrow 9 > 18a \rightarrow a < \frac{1}{2}$ $q - 18a < 0 \rightarrow 9 < 18a \rightarrow a > \frac{1}{2}$ ب) $x^2 - 2x - 1 = 0 \rightarrow x^2 - 2x + 1 = 2 \rightarrow (x-1)^2 = 2$ $x - 1 = \pm\sqrt{2} \rightarrow x = 1 \pm \sqrt{2}$	الف) $x^2 - x - 1 = 0 \rightarrow x^2 - x + \frac{1}{4} = \frac{5}{4} \rightarrow (x - \frac{1}{2})^2 = \frac{5}{4}$ $x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}} \rightarrow x = \frac{1}{2} \pm \frac{\sqrt{5}}{2}$ ب) $x^2 - x - 1 = 0 \rightarrow x^2 - x + \frac{1}{4} = \frac{5}{4} \rightarrow (x - \frac{1}{2})^2 = \frac{5}{4}$ $x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}} \rightarrow x = \frac{1}{2} \pm \frac{\sqrt{5}}{2}$	الف) $x^2 - 2x - 1 = 0 \rightarrow x^2 - 2x + 1 = 2 \rightarrow (x-1)^2 = 2$ $x - 1 = \pm\sqrt{2} \rightarrow x = 1 \pm \sqrt{2}$ ب) $x^2 + 6x + 5 = 0 \rightarrow x^2 + 6x + 9 = -4 \rightarrow (x+3)^2 = -4$ $x + 3 = \pm\sqrt{-4} \rightarrow x = -3 \pm 2i$
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جدول مشترک و به توان ۲

الف) $x^2 - 11x + 28 = 0 \rightarrow (x - 7)(x - 4) \rightarrow x - 7 = 0 \rightarrow x = 7$
 $x - 4 = 0 \rightarrow x = 4$

ب) $x^2 + 3x - 28 = 0 \rightarrow (x + 7)(x - 4) \rightarrow x + 7 = 0 \rightarrow x = -7$
 $x - 4 = 0 \rightarrow x = 4$

الف) $5x^2 - 12x + 7 = 0 \rightarrow x^2 - 12x + (5 \times 7) = 0 \rightarrow x^2 - 12x + 35 = 0$
 $(x - 7)(x - 5) \rightarrow x - 7 = 0 \rightarrow x = 7$
 $x - 5 = 0 \rightarrow x = 5$

ب) $3x^2 - 10x + 7 = 0 \rightarrow x^2 - 10x + (3 \times 7) = 0 \rightarrow x^2 - 10x + 21 = 0$
 $(x - 3)(x - 7) \rightarrow x - 3 = 0 \rightarrow x = 3$
 $x - 7 = 0 \rightarrow x = 7$

الف) $2x^2 - 5x + 3 = 0 \rightarrow x^2 - 5x + 6 = 0 \rightarrow (x - 2)(x - 3)$
 $x - 2 = 0 \rightarrow x = 2$
 $x - 3 = 0 \rightarrow x = 3$

ب) $2x^2 + 5x + 3 = 0 \rightarrow x^2 + 5x + 6 = 0 \rightarrow (x + 2)(x + 3) \rightarrow x + 2 = 0 \rightarrow x = -2$
 $x + 3 = 0 \rightarrow x = -3$

ج) $2x^2 - 5x + 1 = 0$
 $x_1 = \frac{5 + \sqrt{25 - 4 \times 2 \times 1}}{2 \times 2} = \frac{5 + \sqrt{17}}{4}$
 $x_2 = \frac{5 - \sqrt{17}}{4}$

د) $4x^2 + 7x + 9 = 0$
 $x_1 = \frac{-7 + \sqrt{49 - 144}}{8}$
 زیرا رادیکال که همان Δ است منفی است پس جواب ندارد.
 $\Delta < 0$

$x^2 - 3x - 2 = 0$
 $x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a} \rightarrow x_1 = \frac{3 + \sqrt{9 + 8}}{2} = \frac{3 + \sqrt{17}}{2}$
 $x_2 = \frac{3 - \sqrt{17}}{2}$
 جمع ریشه ها $= \frac{3 + \sqrt{17}}{2} + \frac{3 - \sqrt{17}}{2} = \frac{6}{2} = 3 = -\frac{b}{a}$
 ضرب ریشه ها $= \frac{(3 + \sqrt{17})(3 - \sqrt{17})}{4} = \frac{9 - 17}{4} = \frac{-8}{4} = -2 = \frac{c}{a}$

الف) $5^r - 2^p = 3^r - 2(-2) \rightarrow 9 + 4 = 13$

ب) $5^r - 3^p = 2^r - 3(3)(-2) = 12 + 12 = 24$

الف) $\binom{9}{5} + \binom{9}{2} = \frac{9!}{(9-5)!5!} + \frac{9!}{(9-2)!2!} = \frac{9!}{4!5!} + \frac{9!}{7!2!} = 126 + 36 = 162$
 $\binom{n}{k} = \frac{n!}{(n-k)!k!}$
 $162 + 21 = 183$

ب) $\binom{9}{2} - \binom{1}{2} = \frac{9!}{(9-2)!2!} - \frac{1!}{(1-2)!2!} = \frac{9!}{7!2!} - \frac{1!}{(-1)!2!} = 36 - 1 = 35$
 $\binom{n}{k} = \frac{n!}{(n-k)!k!}$
 $35 - 21 = 14$