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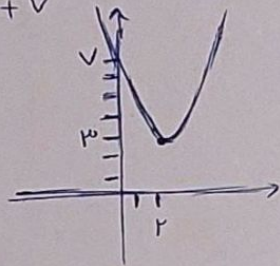
نام و نام خانوادگی: فرباناز الباسی پاسخنامه تشریحی تکلیف شماره ۱۲ کلاس: یازدهم دبیرستان B

الف) $y = x^2 - 4x + 7$

$a > 0$

$x = -\frac{b}{2a} = 2$

$y = 3$

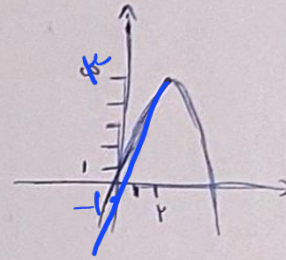


ب) $-x^2 + 4x - 1$

$a < 0$

$x = -\frac{b}{2a} = 2$

$y = 3$



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$2x^2 + (m+1)x + \frac{1}{4}m + 2 = 0$

الف) $\Delta > 0 \quad (m+1)^2 - 4 \times 2 \times \frac{1}{4}m + 2 = m^2 + 2m + 1 - 2m - 1 = 0 \Rightarrow m^2 - 2m - 1 > 0 \quad \frac{(m-2)(m+3)}{-1-1+}$

$(-\infty, -3) \cup (2, +\infty)$

ب) $\Delta = 0 \quad (m-2)(m+3) = 0 \quad m = 2, -3$

ج) $\Delta < 0 \quad (m-2)(m+3) < 0 \quad (-3, 2)$

د) $\Delta \geq 0 \quad (m-2)(m+3) \geq 0 \quad (-\infty, -3] \cup [2, +\infty)$

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$y = (m-2)x^2 - 2(m+1)x + 10$

الف) $\frac{c}{a} < 0 \quad \frac{10}{m-2} < 0 \quad \frac{-1}{-1-1+} \quad \frac{c}{a} > 0 \quad \frac{10}{m-2} > 0 \quad \frac{2}{-1-1+} \quad \emptyset$

ب) $\frac{c}{a} < 0 \quad \frac{10}{m-2} < 0 \quad m < 2$

$\frac{-b}{a} < 0 \quad \frac{2m+2}{m-2} < 0 \quad -1 < m < 2$

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الف) $\frac{c}{a} < 0 \quad \frac{10}{m-2} < 0 \quad \frac{2}{-1-1+} \quad |m < 2|$

ب) $\frac{-b}{2a} = -2 \quad \frac{2m+2}{2m-4} = -2 \quad 2m+2 = -4m+8 \quad 6m = 6 \quad |m = 1|$

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$\frac{2x^2}{3} - (2\sin\alpha)x + \frac{1}{3} = 0$

$\Delta \geq 0 \quad (-2\sin\alpha)^2 - 4 \times \frac{2}{3} \times \frac{1}{3} = 4\sin^2\alpha - \frac{8}{9} \geq 0 \Rightarrow \sin^2\alpha \geq \frac{2}{9} \quad \sin\alpha = \pm \frac{\sqrt{2}}{3}$

$\sin\alpha = 1 \rightarrow \boxed{x = \frac{1}{2}} \quad \sin\alpha = -1 \rightarrow x = -\frac{1}{2}$

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$y = \frac{(13x^2 - 2x - 1)(13x^2 - 13x - 6)}{1 - x^2} \Rightarrow \frac{(13x+1)(x-1)(13x-6)(x+1)}{-(x-1)(x+1)} \Rightarrow$ $-(13x^2 - 12x + 13x - 6) \rightarrow -13x^2 + 13x + 6 \quad x = \frac{-b}{2a} = \frac{+13}{12}$ $y_{\max} = -7\left(\frac{13}{12}\right)^2 + 13 \times \frac{13}{12} + 6 = \frac{169}{12} = \boxed{\frac{149}{12}}$	6 5
$\frac{13}{m}(\alpha + \beta) = \frac{6}{\alpha}(\alpha\beta) + 11 \quad \frac{13}{m}\left(\frac{m+1}{m}\right) = \frac{6}{\frac{-b}{a}}\left(\frac{-1}{m}\right) + 11 \quad \frac{13m+14}{m} = 11$ $14 = 11m \quad \boxed{m=1}$ $13x^2 - 4x - 1 = 0 \quad \alpha + \beta = \frac{4}{13} \rightarrow \left(\frac{13}{1}\right)^2 - 2\left(-\frac{1}{1}\right) = \frac{9}{1} + 1 = \boxed{\frac{10}{1}}$ $\begin{cases} s = \frac{13}{1} \\ p = -\frac{1}{1} \end{cases}$	7 5
$13x^2 - 6\beta + 1 = 0 \quad 13x^2 = 6\beta - 1 \quad 13x = \beta \quad 13x^2 = 6\beta - 1 \quad 13\beta = 6\beta - 1 \quad 7\beta = -1$ $\beta = -\frac{1}{7} \quad 13x^2 - 6\left(-\frac{1}{7}\right) + 1 = 0 \quad 13x^2 + \frac{6}{7} + 1 = 0 \quad 13x^2 + \frac{13}{7} = 0$ $\alpha\beta = 1 \quad a = \frac{1}{\beta} \quad \frac{13\alpha + \beta}{\alpha\beta} = \frac{1}{\beta} + \frac{13\alpha\beta - 1}{\alpha(\alpha\beta - 1)}$ $\frac{\alpha + \beta}{\alpha} = \frac{13 - 13\beta}{\alpha} = 14$	8 5
$y_1 = ax^2 + bx + c \rightarrow y = f \quad x=0 \quad a(0) + b(0) + c = f \quad c = f$ $x=1 \quad \begin{cases} fa + 1b + c = 15 \\ 1a + 4b = 10 \end{cases} \quad a=1 \quad b=3$ $x=-1 \quad \begin{cases} 9a - 3b + c = f \\ 11a - 9b = 0 \end{cases}$ $ax^2 + bx + c \rightarrow x^2 + 3x + 1 \quad \frac{-b}{2a} = \boxed{\frac{-3}{2}}$	9 5
$x=y \quad 13x^2 + (m+1)x + m + 4 = x \quad 13x^2 + mx + m + 4 = 0$ $\Delta = 0 \quad (m)^2 - 4 \times 1 \times (m+4) = 0 \quad m^2 - 4m - 16 = 0 \quad (m-12)(m+4) = 0$ $m = 12 \quad 13x^2 + 13x + 16 = 0 \quad x^2 + x + \frac{16}{13} = 0 \quad (x + \frac{1}{2})^2 = 0 \quad x = -\frac{1}{2}$ $m = -4 \quad 13x^2 - 13x + 1 = 0 \quad x^2 - x + \frac{1}{13} = 0 \quad (x-1)^2 = 0 \quad \boxed{x=1}$	10 5