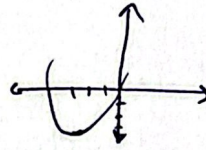


الف) $y = x^2 + 6x + 5$

ب)

min $\left| \begin{array}{l} \frac{-b}{2a} = \frac{-6}{2} = -3 \\ 9 - 18 + 5 = -4 \end{array} \right.$

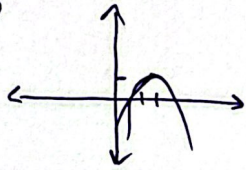


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الف) $y = -x^2 + 4x - 3$

ب) $y = -x^2 + 4x - 3$

max $\left| \begin{array}{l} \frac{-b}{2a} = \frac{-4}{-2} = 2 \\ -4 + 8 - 3 = 1 \end{array} \right.$



$-(x^2 - 4x + 3) = 0$
 $\Rightarrow (x-1)(x-3) = 0$

عدد x را قطع نمی‌کنیم

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الف) $x^2 - 2x + 1 = 0$
 $(x-1)^2 = 0$
 $x-1 = \sqrt{0}$
 $x = \sqrt{0} + 1$

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

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الف) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{2 \pm \sqrt{4 + 4}}{2} = \frac{2 \pm \sqrt{8}}{2} = \frac{2 \pm 2\sqrt{2}}{2} = 1 \pm \sqrt{2}$

ب) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-1 \pm \sqrt{1 + 16}}{2} = \frac{-1 \pm \sqrt{17}}{2}$

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الف) $(x-4)(x-7) = 0$
 $x = 4, 7$

ب) $(x+7)(x-4) = 0$
 $x = -7, 4$

الف) $x^2 - 12x + 35 = 0$
 $(x-7)(x-5) = 0$
 $x = \frac{7}{5}, \frac{5}{5}$
 $x = \frac{7}{5}, 1$

ب) $x^2 - 12x + 35 = 0$
 $(x-7)(x-5) = 0$
 $x = \frac{7}{5}, \frac{5}{5}$
 $x = 1, \frac{7}{5}$

الف) $x^2 - 5x + 4 = 0$
 $(x-4)(x-1) = 0$
 $x = \frac{4}{1}, 1$

ب) $x^2 - 5x + 4 = 0$
 $(x+3)(x+2) = 0$
 $x = \frac{-3}{2}, -1$

ج) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{5 \pm \sqrt{17}}{2}$

د) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-5 \pm \sqrt{17}}{2}$

$s = \frac{-b}{a} = \frac{3}{1} = 3$

$p = \frac{c}{a} = \frac{-4}{1} = -4$

الف) $s^2 - 2p = 9 - 2(-4) = 9 + 8 = 17$

ب) $s^3 - 3sp = 27 - 3(3)(-4) = 27 + 36 = 63$

الف) $\frac{1 \times 5 \times 4 \times 3 \times 2 \times 1}{1 \times 2 \times 3 \times 4 \times 5 \times 6} + \frac{9 \times 1}{1} = \frac{1}{6} + 9 = 9\frac{1}{6}$

ب) $\frac{1 \times 9 \times 4 \times 3 \times 2 \times 1}{1 \times 2 \times 3 \times 4 \times 5 \times 6} = \frac{1 \times 9}{1 \times 2} = 4\frac{1}{2}$