

الف) $y = x^2 + 4x + 5 \rightarrow \min$ $\frac{-b}{2a} = \frac{-4}{2} = -2$ $\frac{-\Delta}{2a} = \frac{-12}{2} = -6$ $\Delta = b^2 - 4ac = 16 - 20 = -4$

$\Delta = b^2 - 4ac \rightarrow (4)^2 - (4)(5) = 16 - 20 = -4$

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



الف) $y = -x^2 + 4x - 3 \rightarrow \max$ $\frac{-b}{2a} = \frac{-4}{-2} = 2$



$\Delta = b^2 - 4ac \rightarrow (4)^2 - (4)(-1)(-3) = 16 - 12 = 4$

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

$2x^2 - 2x + a = 0$

الف) $x^2 - 2x - 1 = 0 \rightarrow (x-1)^2$

ب) $(x^2 - x) \cdot x \rightarrow x^3 - x^2 = 0$

الف) $x^2 - 2x - 1 = 0 \rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a}$, $\Delta = b^2 - 4ac$

$\Delta = (-2)^2 - (4)(-1) = 4 + 4 = 8$
 $\frac{-(-2) \pm \sqrt{8}}{2} = \frac{2 \pm \sqrt{8}}{2}$

ب) $x^2 - x - 1 = 0$

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

