8. $x^2 - 3x - 2 = 0$

akar2nya x_1 dan x_2.

Plk baru dgn akar2 $(3x_1 + 1)$ dan $(3x_2 + 1)$ adl

misal :

$\alpha = 3x_1 + 1$

$\beta = 3x_2 + 1$

dr diketahui :

$x_1 x_2 = \frac{-2}{1} = -2$

$x_1 + x_2 = \frac{-(-3)}{1} = 3$

shg :

$\alpha . \beta = (3x_1 + 1)(3x_2 + 1)$

$= 9x_1 x_2 + 3(x_1 + x_2) + 1$

$= -18 + 9 + 1$

$= -8$

$\alpha + \beta = 3(x_1 + x_2) + 2$

$= 11$

Plk Baru adl

$x^2 - (\alpha + \beta)x + \alpha\beta = 0$

$x^2 - 11x + (-8) = 0$

$x^2 - 11x - 8 = 0$

9. $x^2 - 5x - 1 = 0$ akar2nya p dan q.

Plk baru dgn akar2 $(2p+1)$ dan $(2q+1)$ adl

misal $\alpha = 2p + 1$

$\beta = 2q + 1$

dr diket :

$p . q = \frac{-1}{1} = -1$

$p + q = \frac{-(-5)}{1} = 5$

shg =

$\alpha . \beta = (2p + 1)(2q + 1)$

$= 4pq + 2(p+q) + 1$

$= -4 + 2.5 + 1$

$= 7$

$\alpha + \beta = (2p + 1) + (2q + 1)$

$= 2(p+q) + 2$

$= 2.5 + 2$

$= 12$

Plk baru adl

$x^2 - (\alpha + \beta)x + \alpha\beta = 0$

$x^2 - 12x + 7 = 0$

10. $2x^2 + 3x - 2 = 0$ akar2nya α dan β.

Plk baru dgn akar2 $\frac{\alpha}{\beta}$ dan $\frac{\beta}{\alpha}$ adl.

misal : $A = \frac{\alpha}{\beta}$

$B = \frac{\beta}{\alpha}$

dr diket :

$\alpha . \beta = \frac{-2}{2} = -1$

$\alpha + \beta = \frac{-(3)}{2} = -3/2$

shg :

$A . B = \frac{\alpha}{\beta} \cdot \frac{\beta}{\alpha} = 1$

$A + B = \frac{\alpha}{\beta} + \frac{\beta}{\alpha}$

$= \frac{\alpha^2 + \beta^2}{\alpha\beta}$

$= \frac{(\alpha + \beta)^2 - 2\alpha\beta}{\alpha\beta}$

$= \frac{9/4 - 2(-1)}{-1}$

$= -17/4$

Plk baru adl

$x^2 - (A + B)x + AB = 0$

$x^2 + 17/4 x + 1 = 0$

$4x^2 + 17x + 4 = 0$