Resolució (per Cramer)

Recordem que $A' = \left(\begin{array}{ccc|c} 1 & -3 & k & -12 \\ k+2 & -2 & 1 & -15 \\ 2 & 4 & -3 & k+7 \end{array}\right)$ i que $|A| = 4k^2+3k-22$ i és $\neq 0$ en aquest cas.

$$\underbrace{\begin{matrix} 1 & -3 & k \\ k+2 & -2 & 1 \\ 2 & 4 & -3 \end{matrix}}_{A}$$

$$\boxed{x = \frac{\Delta_1}{|A|} = \frac{\begin{vmatrix} -12 & -3 & k \\ -15 & -2 & 1 \\ k+7 & 4 & -3 \end{vmatrix}}{4k^2+3k-22} = \dots = \frac{2k^2-49k+90}{4k^2+3k-22}}$$

$$\boxed{y = \frac{\Delta_2}{|A|} = \frac{\begin{vmatrix} 1 & -12 & k \\ k+2 & -15 & 1 \\ 2 & k+7 & -3 \end{vmatrix}}{4k^2+3k-22} = \dots = \frac{k^3+9k^2+7k-58}{4k^2+3k-22}}$$

$$\boxed{z = \frac{\Delta_3}{|A|} = \frac{\begin{vmatrix} 1 & -3 & -12 \\ k+2 & -2 & -15 \\ 2 & 4 & k+7 \end{vmatrix}}{4k^2+3k-22} = \dots = \frac{3k^2-23k+34}{4k^2+3k-22}}$$

Si factoritzem i simplifiquem les fraccions anteriors (pas ~~opcional~~) queda:

$$x = \frac{\cancel{2}\cancel{(k-2)}\cdot\left(k-\frac{45}{2}\right)}{2\,\cancel{4}\cancel{(k-2)}\cdot\left(k+\frac{11}{4}\right)} = \frac{k-\frac{45}{2}}{2\left(k+\frac{11}{4}\right)}$$

$$y = \frac{\cancel{(k-2)}\left[k-\left(\frac{-11+\sqrt{5}}{2}\right)\right]\cdot\left[k-\left(\frac{-11-\sqrt{5}}{2}\right)\right]}{4\cancel{(k-2)}\left(k+\frac{11}{4}\right)} = \frac{\left[k-\left(\frac{-11+\sqrt{5}}{2}\right)\right]\cdot\left[k-\left(\frac{-11-\sqrt{5}}{2}\right)\right]}{4\left(k+\frac{11}{4}\right)}$$

$$z = \frac{3\cdot\cancel{(k-2)}\left(k-\frac{17}{3}\right)}{4\cancel{(k-2)}\left(k+\frac{11}{4}\right)} = \frac{3\left(k-\frac{17}{3}\right)}{4\left(k+\frac{11}{4}\right)}$$