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Lampiran 1. Persamaan differensial fraksional $y_0,\ z_0,\ y_1,\ z_1,\ y_2,\ z_2, \ldots$

Penentuan persamaan differensial fraksional untuk $y_0,\ y_1,\ y_2, \ldots$ dengan melakukan subtitusi pada persamaan (4.3b) dari persamaan (4.4a)-(4.4c)

$$D^{\beta}(y_0 + py_1 + p^2y_2 + p^3y_3 + p^4y_4 + p^5y_5 + p^6y_6 + \cdots) =$$

$$p[a(x_0 + px_1 + p^2x_2 + p^3x_3 + p^4x_4 + p^5x_5 + \cdots)$$

$$(z_0 + pz_1 + p^2z_2 + p^3z_3 + p^4z_4 + p^5z_5 + \cdots)$$

$$-b(y_0 + py_1 + p^2y_2 + p^3y_3 + p^4y_4 + p^5y_5 + \cdots)]$$

$$D^{\beta}y_0 + pD^{\beta}y_1 + p^2D^{\beta}y_2 + p^3D^{\beta}y_3 + p^4D^{\beta}y_4 + p^5D^{\beta}y_5 + p^6D^{\beta}y_6 + \cdots =$$

$$p[((ax_0z_0 + pax_0z_1 + p^2ax_0z_2 + p^3ax_0z_3 + p^4ax_0z_4 + p^5ax_0z_5 + \cdots)$$

$$+(pax_1z_0 + p^2ax_1z_1 + p^3ax_1z_2 + p^4ax_1z_3 + p^5ax_1z_4 + \cdots) + (p^2ax_2z_0$$

$$+p^3ax_2z_1 + p^4ax_2z_2 + p^5ax_2z_3 + \cdots) + (p^3ax_3z_0 + p^4ax_3z_1 + p^5ax_3z_2$$

$$+\cdots) + (p^4ax_4z_0 + p^5ax_4z_1 + \cdots) + (p^5ax_5z_0 + \cdots) + \cdots) - (by_0$$

$$+pby_1 + p^2by_2 + p^3by_3 + p^4by_4 + p^5by_5 + \cdots)]$$

$$D^{\beta}y_0 + pD^{\beta}y_1 + p^2D^{\beta}y_2 + p^3D^{\beta}y_3 + p^4D^{\beta}y_4 + p^5D^{\beta}y_5 + p^6D^{\beta}y_6 + \cdots =$$

$$p(ax_0z_0 - by_0) + p^2(ax_0z_1 + ax_1z_0 - by_1) + p^3(ax_0z_2 + ax_1z_1 + ax_2z_0$$

$$-by_2) + p^4(ax_0z_3 + ax_1z_2 + ax_2z_1 + ax_3z_0 - by_3) + p^5(ax_0z_4 + ax_1z_3$$

$$+ax_2z_2 + ax_3z_1 + ax_4z_0 - by_4) + p^6(ax_0z_5 + ax_1z_4 + ax_2z_3 + ax_3z_2$$

$$+ax_4z_1 + ax_5z_0 - by_5) + \cdots$$

Penentuan persamaan differensial fraksional untuk $z_0, z_1, z_2, \ldots$ dengan melakukan subtitusi pada persamaan (4.3c) dari persamaan (4.4a)-(4.4c)

$$D^{\gamma}(z_0 + pz_1 + p^2z_2 + p^3z_3 + p^4z_4 + p^5z_5 + p^6z_6 + \cdots) = p[c(y_0 + py_1$$

$$+p^2y_2 + p^3y_3 + p^4y_4 + p^5y_5 + \cdots) - c(z_0 + pz_1 + p^2z_2 + p^3z_3 + p^4z_4$$

$$+p^5z_5 + \cdots)(y_0 + py_1 + p^2y_2 + p^3y_3 + p^4y_4 + p^5y_5 + \cdots) - \delta(z_0 + pz_1$$

$$+p^2z_2 + p^3z_3 + p^4z_4 + p^5z_5 + \cdots)]$$

$$D^{\gamma}z_0 + pD^{\gamma}z_1 + p^2D^{\gamma}z_2 + p^3D^{\gamma}z_3 + p^4D^{\gamma}z_4 + p^5D^{\gamma}z_5 + p^6D^{\gamma}z_6 + \cdots = p[(cy_0$$

$$+pcy_1 + p^2cy_2 + p^3cy_3 + p^4cy_4 + p^5cy_5 + \cdots) - ((cz_0y_0 + pcz_0y_1$$

$$+p^2cz_0y_2 + p^3cz_0y_3 + p^4cz_0y_4 + p^5cz_0y_5 + \cdots) + (pcz_1y_0 + p^2cz_1y_1$$

$$+p^3cz_1y_2 + p^4cz_1y_3 + p^5cz_1y_4 + \cdots) + (p^2cz_2y_0 + p^3cz_2y_1 + p^4cz_2y_2$$

$$+p^5cz_2y_3 + \cdots) + (p^3cz_3y_0 + p^4cz_3y_1 + p^5cz_3y_2 + \cdots) + (p^4cz_4y_0$$

$$+p^5cz_4y_1 + \cdots) + (p^5cz_5y_0 + \cdots) + \cdots) - (\delta z_0 + p\delta z_1 + p^2\delta z_2 + p^3\delta z_3$$

$$+p^4\delta z_4 + p^5\delta z_5 + \cdots)$$

$$D^{\gamma}z_0 + pD^{\gamma}z_1 + p^2D^{\gamma}z_2 + p^3D^{\gamma}z_3 + p^4D^{\gamma}z_4 + p^5D^{\gamma}z_5 + p^6D^{\gamma}z_6 + \cdots = p(cy_0$$

$$-cz_0y_0 - \delta z_0) + p^2(cy_1 - cz_0y_1 - cz_1y_0 - \delta z_1) + p^3(cy_2 - cz_0y_2$$

$$-cz_1y_1 - cz_2y_0 - \delta z_2) + p^4(cy_3 - cz_0y_3 - cz_1y_2 - cz_2y_1 - cz_3y_0 - \delta z_3)$$

$$+p^5(cy_4 - cz_0y_4 - cz_1y_3 - cz_2y_2 - cz_3y_1 - cz_4y_0 - \delta z_4) + p^6(cy_5$$

$$-cz_0y_5 - cz_1y_4 - cz_2y_3 - cz_3y_2 - cz_4y_1 - cz_5y_0 - \delta z_5) + \cdots$$