



$$c^2 t^4 + 2gct^3 + dt^2 + 2fct + c^2 = 0$$

$\begin{matrix} t_1 \\ t_2 \\ t_3 \\ t_4 \end{matrix}$

$$\sum_{i=1}^4 x_i = \frac{c \sum_{i=1}^4 t_i}{\sum_{i=1}^4 t_i} = \frac{c}{\sum_{i=1}^4 t_i} \left(-\frac{2g}{c} \right) = -\frac{g}{\sum_{i=1}^4 t_i}$$

$$\sum_{i=1}^4 \left(\frac{x_i}{c} \right) = \frac{\sum_{i=1}^4 x_i}{c} = \frac{-g}{\sum_{i=1}^4 t_i} = \frac{-g}{\sum_{i=1}^4 t_i} \cdot \frac{\sum_{i=1}^4 t_i}{\sum_{i=1}^4 t_i} = \frac{-g \sum_{i=1}^4 t_i}{\sum_{i=1}^4 t_i^2}$$