

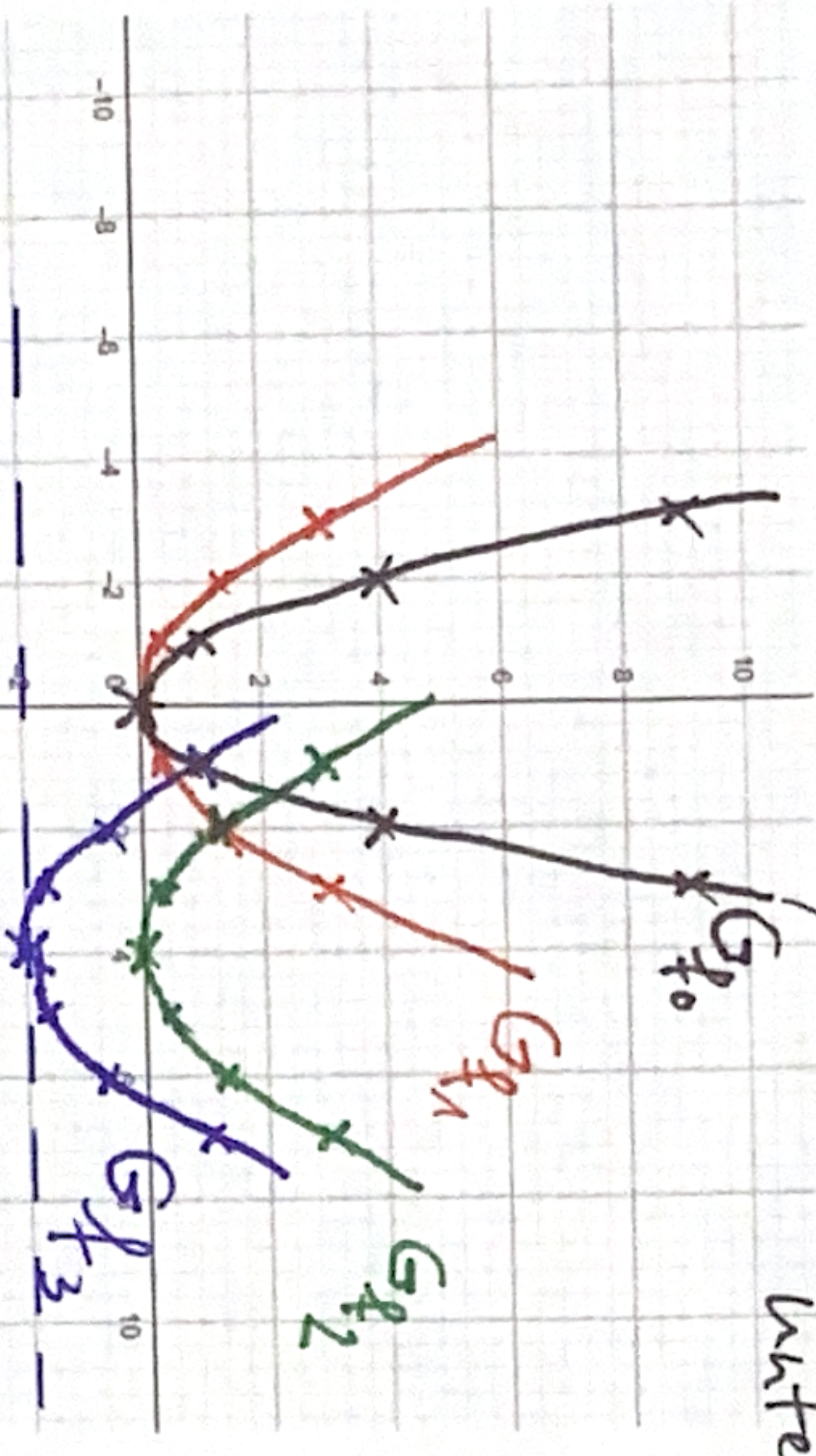
Elementare

$$f_0(x) = x^2 \quad \text{NP}$$

$$f_1(x) = \frac{1}{3}x^2 \quad \text{Streckung}$$

$$f_2(x) = \frac{1}{3}(x-4)^2 \quad \text{in } y\text{-Richtung}$$

$$f_3(x) = \frac{1}{3}(x-4)^2 - 2 \quad \text{Verschiebung in } x\text{-R.} \\ \text{+ 4 Wpdl rechts} \\ \text{Verschiebung} \\ \text{in } y\text{-R. } -2 \text{ nach} \\ \text{unten}$$



$$f_0(x) \xrightarrow{\frac{1}{3}} \frac{1}{3} f_0(x) \\ x \mapsto x-4 \xrightarrow{\frac{1}{3}} \frac{1}{3} f_0(x-4) \\ y \mapsto y-2 \xrightarrow{\frac{1}{3}} \frac{1}{3} f_0(x-4) - 2$$

Transformationen

- $f_0(x) = \sin(x)$

- $f_1(x) = 3 f_0(x) = 3 \cdot \sin(x)$

- $f_2(x) = f_1(x - \frac{\pi}{3}) = 3 \cdot \sin(x - \frac{\pi}{3})$

- $f_3(x) = f_2(x) - 2 = 3 \cdot \sin(x - \frac{\pi}{3}) - 2$

