

Aula 13

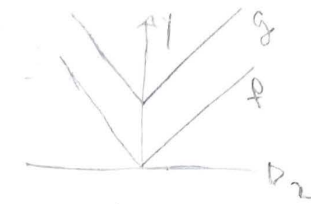
Transformações do Gráfico

Sejam $f: A \subseteq \mathbb{R} \rightarrow \mathbb{R}$ uma função, $a, b \in \mathbb{R}$.

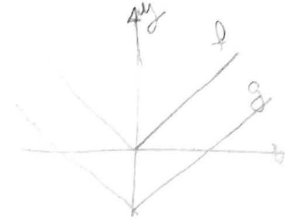
Translação vertical

$$g(x) = f(x) + b$$

$$\text{Dom } g = A$$



$b > 0$
translação p/ cima

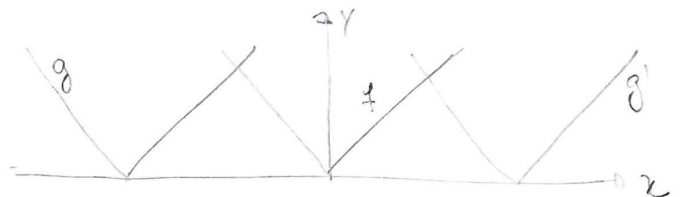


$b < 0$
translação p/ baixo

Translação horizontal

$$g(x) = f(x+a)$$

$$\text{Dom } g = \{x \in \mathbb{R} \mid x+a \in A\}$$



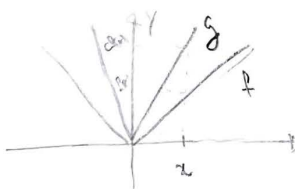
$a > 0$
translação à esquerda

$a < 0$
translação à direita

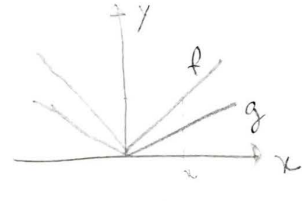
Homotetia vertical

$$g(x) = c \cdot f(x)$$

$$\text{Dom } g = A ; c > 0$$



$c > 1$
dilatação vertical

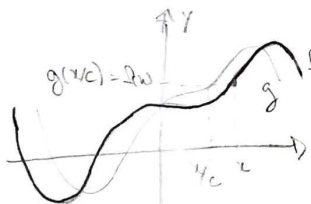


$0 < c < 1$
contração vertical

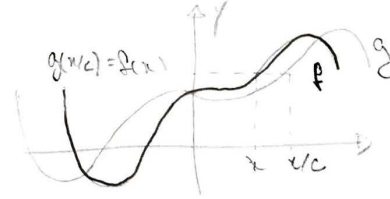
Homotetia horizontal

$$g(x) = f(c \cdot x)$$

$$\text{Dom } g = \{x \in \mathbb{R} \mid c \cdot x \in A\}$$



$c > 1$
contração horizontal

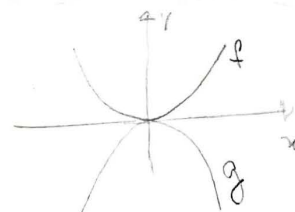


$0 < c < 1$
dilatação horizontal

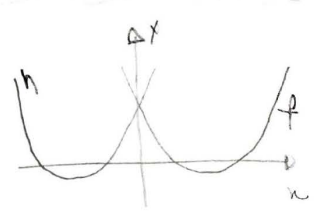
Reflexão

$$g(x) = -f(x)$$

$$\text{Dom } g = A$$



reflexão em relação ao eixo x



reflexão em relação ao eixo y