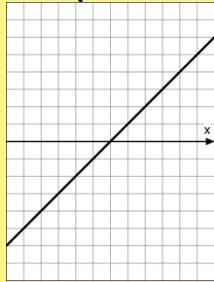
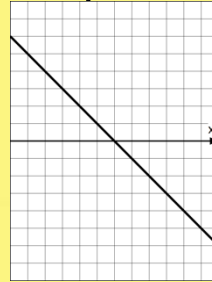


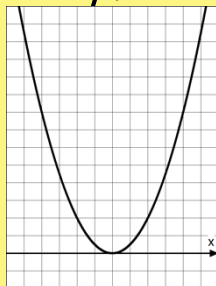
x



$-x$



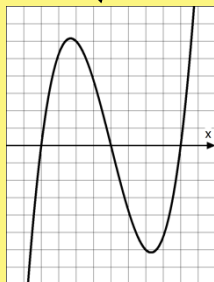
x^2



$-x^2$



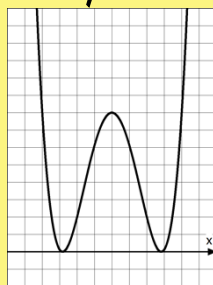
x^3



$-x^3$



x^4

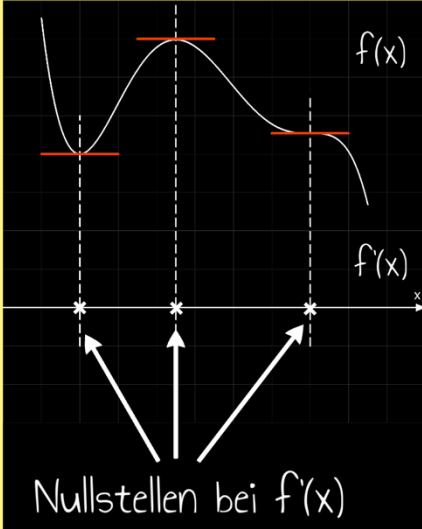


$-x^4$



Graph einer Funktion: Ableitung gesucht

1. Regel

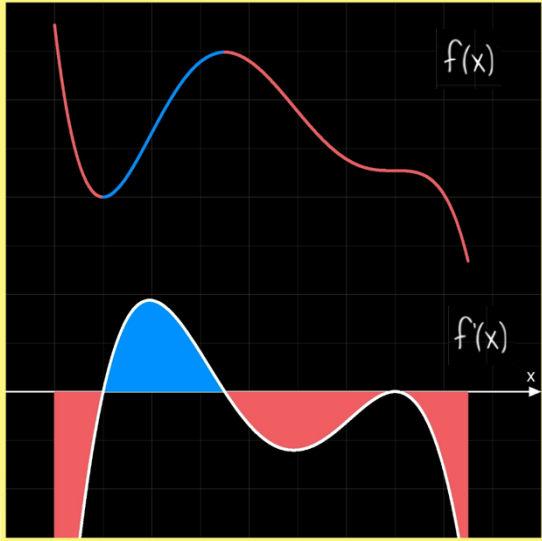


Graph $f(x) \Rightarrow$ Graph $f'(x)$

Hochpunkt
Tiefpunkt
Terrassenpunkt } \Rightarrow Nullstelle

Nullstellen bei $f'(x)$

2. Regel

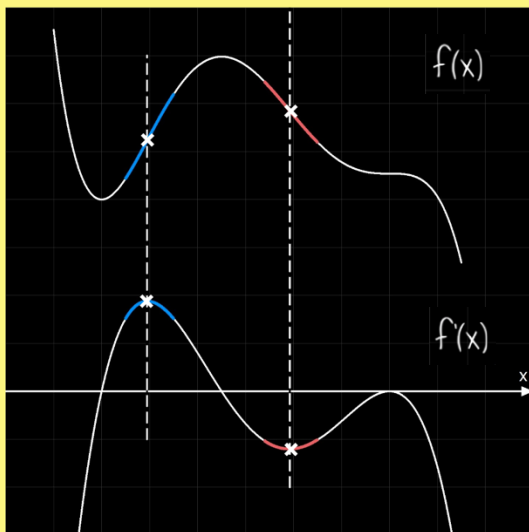


Graph $f(x) \Rightarrow$ Graph $f'(x)$

fällt \Rightarrow unterhalb der x-Achse
 $f'(x) < 0$

steigt \Rightarrow oberhalb der x-Achse
 $f'(x) > 0$

3. Regel



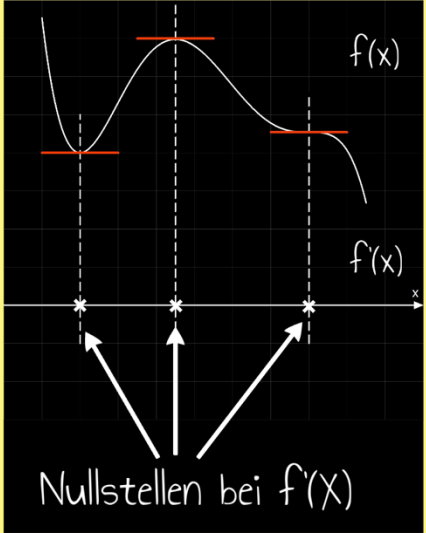
Graph $f(x) \Rightarrow$ Graph $f'(x)$

Wendepunkt
(steigender Graph) \Rightarrow Hochpunkt

Wendepunkt
(fallender Graph) \Rightarrow Tiefpunkt

Graph einer Ableitung: Funktion gesucht

1. Regel

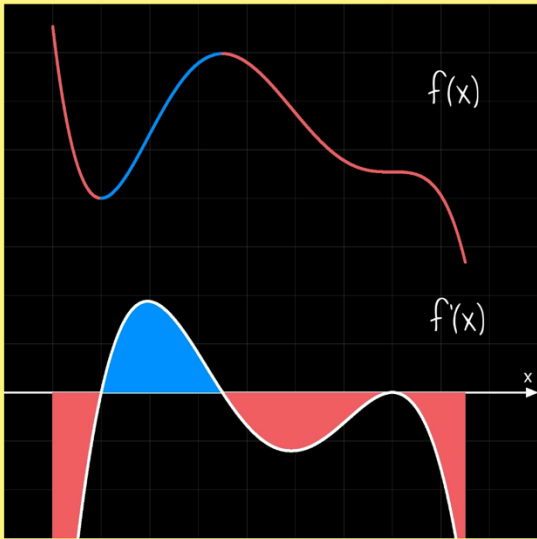


Graph $f'(x) \Rightarrow$ Graph $f(x)$

Nullstelle \Rightarrow $\left\{ \begin{array}{l} \text{Hochpunkt} \\ \text{Tiefpunkt} \\ \text{Terrassenpunkt} \end{array} \right.$

Nullstellen bei $f'(x)$

2. Regel

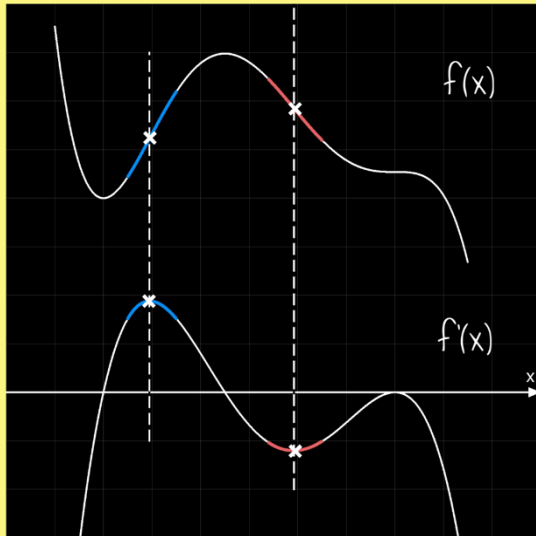


Graph $f'(x) \Rightarrow$ Graph $f(x)$

unterhalb der x-Achse \Rightarrow fällt
 $f'(x) < 0$

oberhalb der x-Achse \Rightarrow steigt
 $f'(x) > 0$

3. Regel



Graph $f'(x) \Rightarrow$ Graph $f(x)$

Hochpunkt \Rightarrow Wendepunkt
(steigender Graph)

Tiefpunkt \Rightarrow Wendepunkt
(fallender Graph)