

Pensieve header: Experimenting with changing the dependent and independent variables.

f'[x] // FullForm

Derivative[1][f][x]

f''[x] // FullForm

Derivative[2][f][x]

f'[x] /. f -> (f[g[#]] &)

f'[g[x]] g'[x]

f''[x] /. f -> (f[g[#]] &)

$g'[x]^2 f''[g[x]] + f'[g[x]] g''[x]$

f'[x] /. f -> (f[#] g[#] &)

$g[x] f'[x] + f[x] g'[x]$

f''[x] /. f -> (f[#] g[#] &)

$2 f'[x] g'[x] + g[x] f''[x] + f[x] g''[x]$