# Rules for integrands of the form $(c + d\,x)^m\,(a + b\,\text{Sech}[e + f\,x])^n$

**N:** $\int u^m\,\text{Sech}[v]^n\,dx$ when $u == c + d\,x \wedge v == a + b\,x$

## Derivation: Algebraic normalization

## Rule: If $u == c + d\,x \wedge v == a + b\,x$, then

$$\int u^m\,\text{Sech}[v]^n\,dx \to \int (c + d\,x)^m\,\text{Sech}[a + b\,x]^n\,dx$$

## Program code:

```
Int[u_^m_.*Sech[v_]^n_.,x_Symbol] :=
  Int[ExpandToSum[u,x]^m*Sech[ExpandToSum[v,x]]^n,x] /;
FreeQ[{m,n},x] && LinearQ[{u,v},x] && Not[LinearMatchQ[{u,v},x]]
```

```
Int[u_^m_.*Csch[v_]^n_.,x_Symbol] :=
  Int[ExpandToSum[u,x]^m*Csch[ExpandToSum[v,x]]^n,x] /;
FreeQ[{m,n},x] && LinearQ[{u,v},x] && Not[LinearMatchQ[{u,v},x]]
```