

In[*]:= **C1**[A0_, W0_, A1_, W1_, A2_, W2_] = (A1 W1) / (A0 W0 + A1 W1 + A2 W2)

Out[*]:=
$$\frac{A1 W1}{A0 W0 + A1 W1 + A2 W2}$$

In[*]:= **den** = A0 W0 + A1 W1 + A2 W2

Out[*]:= A0 W0 + A1 W1 + A2 W2

Same element

In[*]:= **Simplify**[D[C1[A0, W0, A1, W1, A2, W2], A1] == $\frac{W1}{den} \left(1 - \frac{A1 W1}{den}\right)$]

Out[*]:= True

In[*]:= **Simplify**[D[C1[A0, W0, A1, W1, A2, W2], W1] == $\frac{A1}{den} \left(1 - \frac{W1 A1}{den}\right)$]

Out[*]:= True

Different elements

In[*]:= **D**[C1[A0, W0, A1, W1, A2, W2], A2] == $\frac{-A1 W1 W2}{den^2}$

Out[*]:= True

In[*]:= **D**[C1[A0, W0, A1, W1, A2, W2], W2] == $\frac{-A1 A2 W1}{den^2}$

Out[*]:= True